
General

This Guide contains all Overlay modules applicable to Meridian 1 switches equipped with Generic X27 software. Overlays are classified as being either Administration Overlays or Maintenance Overlays.

Option 11C Compact systems and this Guide

Many features and services offered with Option 11C Compact systems are similar (if not identical) to those found with other Meridian 1 systems. For this reason, this guide often refers to those systems. When using this guide with Option 11C Compact, references to Option 11 and Option 11C should also be considered as references to Option 11C Compact.

A list of features and services available with Option 11C Compact is located in the *Option 11C Compact Features and Services Guide*.

Administration modules document input and output in the Meridian prompt-response system. When the data administrator loads an Administration Overlay into memory on a Terminal, the switch outputs a prompt. The data administrator may then type a response to answer that prompt. If the response is valid, the program outputs the next prompt. If the response is invalid, an SCHxxxx message is output. To configure or change a feature, the data administrator may have to respond specifically to several prompts.

Maintenance modules document input and output in the command entry system. The Meridian 1 command entry system may be used to:

- view and print status of switch information
- perform background tests
- disable, enable and test system hardware (e.g., a particular phone)

When a data administrator loads a Maintenance overlay into memory on a Terminal, the administrator may then type in any command documented in that overlay. (The term “overlay” is synonymous with the terms “load”, “LD” and “overlay program”.)

A listing of Feature Packages appears twice in this NTP. An alphabetical listing (sorted by Package mnemonic) of Feature Packages can be found on [page 21](#). A numerical listing of Feature Packages (sorted by Package number) can be found on [page 25](#).

Format of input/output NTP

This NTP presents both maintenance overlays and data administration overlays. Overlay programs are identified by LD XX or LD XXX where XX or XXX is the overlay number. Maintenance overlays and data administration overlays are intermingled in this NTP, appearing in numerical order as separate modules.

Format of Administration Overlays

Two general table types appear in each administration overlay. The first table type is the *Prompts and responses* table. It appears at the front of each load and often follows introductory text. The second general table concludes each Administration overlay and is titled *Alphabetical list of prompts*.

The *Prompts and responses* table

Many *Prompts and responses* tables present a complete list of an overlays prompts. When this is the case, they are simply titled *Prompts and responses*. Other *Prompts and responses* tables present only a subset of an overlays prompts. When this is the case, they are titled *Prompts and responses by task, data block or feature*.

In some overlays, both the complete prompt list and several prompt subsets are presented. When both types of list appear in an overlay, a *Table of contents* box appears to help you find a particular prompt listing.

All *Prompts and responses* tables list prompts in the order in which they are output in each overlay. Acceptable responses or response variables are listed beside each prompt. A brief explanation of the prompt is provided in a *Comment* column.

Subprompts are indented with a hyphen. To have subprompts appear on the

TTY, the data administrator must enter specific responses at the previous non-indented prompt.

The *Alphabetical list of prompts* table

This table provides a more detailed description of a response.

Note that in an *Alphabetical list of prompts* table:

- a** Responses are actual alternatives and not generic variables.
- b** The comment entry is often expansive and may explain the prompt, the response, or both.

Format of Maintenance Overlays

Two general tables appear in each maintenance overlay. The first general table is titled “*Basic commands*”. It appears at the front of each load and often follows introductory text. The second general table concludes each Maintenance overlay and is titled “*Alphabetical list of commands*”.

The *Basic commands* Table

This table presents an abbreviated listing of that overlays’s entire command selection. A brief description of the command is presented beside each command.

The *Alphabetical list of commands* Table

This table provides a more detailed description of a given command.

Note that in an *Alphabetical list of commands* table:

- a** The description is often expansive.
- b** The package column provides the mnemonic of the package that must be equipped on the switch in order to receive this prompt.

Notational conventions

- 1 Although input can be accepted in upper or lower case, most prompts will translate the response to upper case. Exceptions include prompts such as NAME in LD 95 and DES in LD 17.
- 2 Lowercase variables are used in this book to represent many possible responses. The following table lists a few key variables which appear throughout this NTP:

Variable	Meaning
aa	Text string
aaa bbb	Alphabetic or alphanumeric characters
c	Customer Number (0)
c (u)	Terminal Number (TN) Card, Unit; where unit is optional
c u	Terminal Number (TN) Card and Unit
c 0 0 u	Terminal Number (TN). A TN consists of a card, two filler digits, and a unit.
dn	Directory Number (DN)
hh mm	Hours (0 - 23) and Minutes (00 - 59)
loop	Network Loop Number (0-159)
mmm	Month (JAN - DEC) when used in a date.
nnn xxx	Numeric characters
xxx	Numeric value (such as a DN)
yy mm dd	Year (00 - 99), Month (1 - 12) and Day (1 - 31)

- 3 **<cr>** denotes that the carriage return key is to be depressed without inputting any data. The carriage return leaves the existing value unchanged, or enters the default value if there is no existing value.
- 4 **<space>** denotes that the space bar is to be depressed instead of **<cr>**.

- 5 **<value>** denotes a variable value, generally for a prompt response.
For example, **<NIPN>** is the value responded to the NIPN prompt and **<min>** is a minimum value.
- 6 Default values are shown in parentheses
- 7 A range of numbers is denoted by giving the lower and upper limits of the range. For example, given the range **0 - (2) - 3**, the user may manually enter 0, 1, 2, or 3, or carriage return (press **<cr>**) to enter the default of 2.
- 8 Default values are shown in brackets in the response column where applicable. Pressing **<cr>** enters the default.
- 9 Where applicable, precede an entry with an **X** to delete that entry or set your entry to default value.

Related documentation

Feature description

Feature information is provided in the *Features and Services* NTP.

Operational testing

Information and instruction regarding the testing of features and services for telephone sets and attendant (ATT) consoles is contained in the *Features and Services* NTP.

Communicating with the system

To communicate with the system, the following input/output devices at either on-site (local) or remote locations are required:

- TTY or VDT terminal as an input/output device
- RS-232-C compatible printer as an output only device
- maintenance telephone set as an input only device

The input/output system can operate with terminals having the following characteristics:

- Interface: RS-232-C
- Code: ASCII
- Speed: 110, 300, 1200, 2400, 4800, 9600 and 19200 baud
- Loop Current: 20 mA

Accessing the system

Logging in and out

When you access the system through a system terminal, a login procedure is required (refer to [Procedure 1 on page 9](#)). All system passwords are initially set as 0000, but you can change passwords through the Configuration Record (LD 17). See also “Limited Access to Overlays” in the *Features and services* NTP.

Level 1 password. This general password is used in the log in sequence to provide general access to the system by service personnel. Once the system is accessed, the service personnel may then perform any necessary administration or maintenance tasks.

Level 2 password. This administrative password is known and used only by the data administration manager. The password is used to protect the system configuration record and is required when using LD 17 to change either the general or the administrative passwords.

Local and remote access

Input/output terminals may operate either locally or remotely. However, data modems are required for terminals located more than 50 ft (15 m) from the central control interface. Both local and remote terminals interface with the system through Serial Data Interface (SDI) packs.

Many devices can be installed at local and remote locations. When a system terminal is installed locally, it is connected directly to a SDI Card. When a system terminal is installed at a remote location, modems (or data sets) and a telephone line are required between the terminal and the SDI card.

HOST mode access

A system terminal is connected through an SDI port. SDI ports are defined in LD 17 and may be configured for different types of outputs. For example, one terminal may be defined for traffic reports, another for maintenance messages. Two ports may be defined for the same output.

It is possible to log in as a HOST. When in the HOST mode, the outputs defined for the port are only output to that port. Thus the port is no longer limited to the speed of the slowest port sharing the output types. This is useful for applications, such as MAT, which require high speed ports. Once the HOST port has logged out, the outputs to the other ports are restored.

To configure a system terminal, see the “System and limited access passwords” in the configuration record (LD 17). See also OVL403 and OVL404 messages, which are output to the ports affected by a HOST log in.

Line mode interface log in procedure

With Line Mode interface enabled (LON), the backspace can be used to edit input. The entered information (responses, for example) is not processed until the <CR> is entered. When the Line Mode is disabled (LOF), the system terminal interface operates as it did by default.

Procedure 1 Logging in and out

1 Press <cr>

— If the response is: **OVL111 nn TTY** or **OVL111 nn SL-1**

That means: Someone else is logged into the system. When they have logged off, press <cr> and go to Step 2.

— If the response is: **OVL111 nn IDLE** or **OVL111 nn BKGD**

That means: You are ready to log into the system. Go to Step 2.

— If the response is: **OVL000 >**

That means: This is the program identifier which indicates that you are already logged into the system. Go to Step 4.

2 Enter: **LOGI**, then press <cr>

The normal response is: **PASS?**

If there is any other response, refer to the message text in the System Error Messages NTP.

3 Enter: **Level 1** or **Level 2 password** and press <cr>.

If the password is correct, the system responds with the prompt: >

- 4 Load a program by entering: **LD XX or LD XXX**(where X represents the overlay program number).
- 5 Perform tasks
- 6 End the program by entering: **END** or ********
7. Always end the log in session with: **LOGO**

The background routines are then loaded automatically.

Access through the maintenance telephone

A telephone functions as a maintenance telephone when you define the class-of-service as MTA (maintenance telephone allowed) in the Multi-line Telephone Administration program (LD 11). A maintenance telephone allows you to send commands to the system, but you can only use a subset of the commands that can be entered from a system terminal.

You can test tones and outpulsing through the maintenance telephone. Specific commands for those tests are given in the Tone and Digit Switch and Digitone Receiver Diagnostic (LD 34).

To access the system using the maintenance telephone, see [Procedure 2 on page 11](#). To enter commands, press the keys that correspond to the letters and numbers of the command (for example, to enter LD 42 return, key in 53#42##). [Table 2 on page 11](#) shows the translation from a keyboard to a dial pad.

The following overlays (LDs) ARE accessible from a maintenance telephone: 30, 32, 33, 34, 35, 36, 37, 38, 42, 43, 45, 46, 60, 61, 62

The following overlays (LDs) ARE NOT accessible from a maintenance telephone: 31, 40, 48, 77, 80, 92, 96, 135, 137, 143

Note: To use the maintenance telephone, the loop for that telephone must be operating.

Table 2
Translation from keyboard to dial pad

Keyboard				Dial pad
			1	1
A	B	C	2	2
D	E	F	3	3
G	H	I	4	4
J	K	L	5	5
M	N	O	6	6
P	R	S	7	7
T	U	V	8	8
W	X	Y	9	9
			0	0
		Space or #		#
		Return		##
		*		*
Note: There is no equivalent for Q or Z on a dial pad.				

Procedure 2
Access through the maintenance telephone

- 1 Press the prime DN key.
- 2 Place the set in maintenance mode by entering: **xxxx91**
 Where: “xxxx” is the customer Special Prefix (SPRE) number. It is defined in the Customer Data Block and can be printed using LD 21. The SPRE number is typically “1” (which means you would enter 191).
- 3 Check for busy tone by entering “return” : **##**
 - If there is no busy tone, go to Step 4.
 - If there is a busy tone, a program is active. To end an active program and access the system enter: ********
- 4 Load a program by entering: **53#xx##**
 Where: “xx” represents the number of the overlay program

- 5 Perform tasks.
- 6 To exit the program and return the telephone to call processing mode, enter: ****

Background routines are then loaded automatically.

Accessing Meridian Mail Compact

The system allows access to Meridian Mail Compact Administration & Maintenance through a shared terminal. To access the Meridian Mail system, log in and enter: AX. To exit from Meridian Mail, press the Control key and the closed square bracket (]) simultaneously.

System memory and disk space

The following memory information is output when an administration program is loaded. This information is used to plan the addition of new features, such as speed call lists, which require memory.

MEM AVAIL: (U/P): pppppp USED: qqqqqq TOT: rrrrrr

or (depending on the total amount of memory)

MEM AVAIL: (U-ppppp1 P-ppppp2): USED: qqqqqq TOT: rrrrrr

Legend:

Element	Definition
ppppp1	Amount of unprotected memory available for use (in words)
ppppp2	Amount of protected memory available for use (in words)
pppppp	Total memory available for use (ppppp1 + ppppp2) (in words)
qqqqqq	Total amount of memory used (in words)
rrrrrr	Total amount of memory (in words)
xxxxx	Floppy disk records available for storage of additional data

Low memory and disk warnings

If the amount of memory is low, the following message is output:

WARNING: LOW MEMORY

When this message appears avoid performing further administration changes which require more memory. These changes may be lost during the next data dump.

When low memory problems occur, a review of system memory is recommended. Memory may be reclaimed by removing unused features. For example, the system may have speed call lists which are no longer used and can be removed.

Preview of overlay content

System information, call information, features and services are all controlled by overlays (LDs). Data blocks are used to control this information. Listed below are some of the items accessible through the overlays.

Type	Overlay(s)	Item
Terminal Number data block	10, 11, 12, 14	busy lamp field Class of Service (CLS) feature access and requirements key assignments route assignment telephone features (# of key strips, data modules) telephone type trunk access trunk type
Customer data block	15	attendant console information customer number feature access codes incoming call identification intercept options Listed Directory Number (LDN) night service Recorded Announcement (RAN)
Route data block	16	access codes Call Detail Recording (CDR) information code restrictions network trunk features route number trunk route type trunking features (timers, starting arrangements)
Configuration data block	17	input/output devices network loop usage number of memory modules number of network loops system parameters (call register, buffer sizes, traffic)

Multi-User Login

Meridian 1 Multi-User Login (MULTI_USER) (package 242) enables up to three users to log in, load, and execute overlays simultaneously. These three users are in addition to an attendant console or maintenance terminal. The multi-user capability increases the efficiency of craftpersons by enabling them to perform tasks in parallel. To facilitate this operating environment, Multi-User Login includes significant functionality:

- Database conflict prevention
- Additional user commands
- TTY log files
- TTY directed I/O

With multiple overlays operating concurrently, there is the potential for a database conflict if two or more overlays attempt to modify the same data structure. Multi-User Login software prevents such conflicts. When a user requests that an overlay be loaded, the software determines if it could pose a potential conflict with an overlay that is already executing. If no conflict exists, the requested overlay is loaded. If a conflict does exist, the system issues the following message:

OVL429-OVERLAY CONFLICT

The user can try again later, or try to load a different overlay.

Multi-User Login also introduces several new user commands. With these commands, the user has the ability to:

- communicate with other users
- determine who is logged into the system
- halt and resume background and midnight routines
- initiate and terminate terminal monitoring
- change printer output assignment

User commands

A user can issue any of the commands listed and described in [Table 3, “New user commands,” on page 18](#) at the > prompt (after login but with no overlay executing), or from within an overlay. To issue a command from within an overlay, precede the command with an exclamation point (!).

For example, to issue the WHO command from within an overlay, type:

```
!WHO
```

Table 3
New user commands

Command	Description
WHO	Displays user name, port ID, and overlay loaded for each logged-in terminal, as well as the user's MON and SPRT commands (see below).
SEND xx	Sends a message to logged-in terminal xx. When the system responds with a "SEND MSG:" prompt, enter the message text yy...yy (up to 80 characters). The text of a message is considered private and therefore is not written to any log file.
SEND ALL	Sends a message to all logged-in terminals. When the system responds with a "SEND MSG:" prompt, enter the message text yy...yy (up to 80 characters). The text of a message is considered private and therefore is not written to any log file.
SEND OFF	Prevents messages sent by other terminals from appearing at the user's terminal.
SEND ON	Enables messages sent by other terminals to appear at the user's terminal.
FORC xx	Forces terminal xx to log off (the requesting user must log in with LAPW or a level 2 password).
HALT	Stops background and midnight routines during a login session.
HALT OFF	Resumes halted background and midnight routines.
MON xx	Initiates monitoring for terminal xx (the requesting user must log in with LAPW or a level 2 password). The monitored terminal receives a message at the beginning and end of the monitored period.
MON OFF	Turns off the monitor function.
SPRT xx	Assigns printer output to port xx.
SPRT OFF	Resets printer output assignment.

For more information on Multi-User Login, consult the *Management Applications NTP*.

Maintenance display codes

Maintenance displays are located on the faceplate of certain Meridian SL-1 circuit cards. A maintenance display code is a one-, two-, or three-digit alphanumeric code which can indicate the status of the system and identify faulty equipment. For a detailed definition of these codes, see the section titled “HEX” in the System Error Messages NTP.

Time and date of fault

The system identifies the time that faults are detected. When a diagnostic message is output, a timestamp is output within 15 minutes. The format is:

TIMxxx hh:mm dd/mm/yy CPU x

Where: **xxx** is the system ID

The time, date, and system ID are set in LD 2.

Alphabetical List of Packages

Listed below is a comprehensive alphabetical list of packages which may be equipped on this system. For a numerical list of available packages, refer to the section titled “Numerical List of Packages” on page 25.

Note: A list of features and services available with this system is located in the *Features and Services Guide*.

Mnemonic	Feature Name	Number
AAA	Attendant Alternative Answering	174
AAB	Automatic Answerback	47
ACDA	Automatic Call Distribution, Package A	45
ACDB	Automatic Call Distribution, Package B	41
ACDC	Automatic Call Distribution Package C	42
ADMINSET	Set Based Administration	256
AINS	Automatic Installation	200
ALRM_FILTER	Alarm Filtering	243
ANI	Automatic Number Identification	12
ANIR	ANI Route Selection	13
AOP	Attendant Overflow Position	56
ARIE	Aries Digital Sets	170
ATX	Autodial Tandem Transfer	258
BACD	Basic Automatic Call Distribution	40
BARS	Basic Alternate Route Selection	57
BASIC	Basic Call Processing	0
BAUT	Basic Authorization Code	25
BKI	Attendant Break-In/Trunk Offer	127
BQUE	Basic Queuing	28

Mnemonic	Feature Name	Number
BRTE	Basic Routing	14
CAB	Charge Account/Authorization Code	24
CALL ID	Call ID (for AML applications)	247
CBC	Call-by-Call Service	117
CCDR	Calling line Identification in Call Detail Recording	118
CCOS	Controlled Class Of Service	81
CDR	Call Detail Recording	4
CDRE	Call Detail Recording Expansion (7 digit)	151
CDRQ	ACD CDR Queue Record	83
CDRX	Call Detail Recording Enhancement	259
CHG	Charge Account for CDR	23
CPCI	Called Party Control on Internal Calls	310
CPND	Calling Party Name Display	95
CPP	Calling Party Privacy	301
CPRK	Call Park	33
CSL	Command Status Link	77
CTY	Call Detail Recording on Teletype Terminal	5
DCON	M2250 Attendant Console	140
DCP	Directed Call Pickup	115
DDSP	Digit Display	19
DHLD	Deluxe Hold	71
DI	Dial Intercom	21
DKS	Digit Key Signaling	180
DLDN	Departmental Listed Directory Number	76
DNDG	Do-Not-Disturb, Group	16
DNDI	Do-Not-Disturb, Individual	9
DNIS	Dialed Number Identification System	98
DNXP	Directory Number Expansion (7 Digit)	150
DRNG	Distinctive Ringing	74
DSET	M2000 Digital Sets	88
ECCS	Enhanced Controlled Class of Service	173
EES	End-To-End Signaling	10
EMUS	Enhanced Music	119
ENS	Enhanced Night Service	133

Mnemonic	Feature Name	Number
EOVF	ACD Enhanced Overflow	178
FCC68	FCC Compliance for DID Answer Supervision	223
FCA	Forced Charge Account	52
FCBQ	Flexible Call Back Queuing	61
FCDR	New Format CDR	234
FFC	Flexible Feature Codes	139
FNP	Flexible Numbering Plan	160
FTC	Flexible Tones and Cadences	125
FTDS	Fast Tone and Digit Switch	87
GRP	Group Call	48
HIST	History File	55
HOT	Enhanced Hot Line	70
HSE	Hospitality Screen Enhancement	208
ICDR	Internal CDR	108
IDC	Incoming DID Digit Conversion	113
IEC	Inter-Exchange Carrier	149
IMS	Integrated Message System UST and UMG are part of IMS Package.	35
INTR	Intercept Treatment	11
ISDN	Integrated Services Digital Network	145
LMAN	Automatic Call Distribution Load Management (C2)	43
LNK	ACDD, Auxiliary Link Processor	51
LNR	Last Number Redial	90
LSEL	Automatic Line Selection	72
MAT	MAT 5.0	296
MCT	Malicious Call Trace	107
MPO	Multi-Party Operations	141
MSB	Make Set Busy	17
MSDL	Multipurpose Serial Data Link	222
MULTI_USER	Multi-User Login	242
MUS	Music	44
MWC	Message Waiting Center	46
NARS	Network Alternate Route Selection	58
NAS	Network Attendant Service	159
NCOS	Network Class Of Service	32

Mnemonic	Feature Name	Number
NFCR	New Flexible Code Restriction	49
NI2	North America National ISDN Class II Equipment	291
ODAS	Office Data Administration System	20
OOD	Optional Outpulsing Delay	79
OPEN ALARM	Open Alarms	315
OPTF	Optional Features	1
PBXI	1.5 Mbit Digital Trunk Interface	75
PHTN	Phantom TN	254
POVR	Priority Override/Forced Camp-On	186
PRA	International Primary Rate Access (CO)	146
PXLT	Pretranslation	92
RAN	Recorded Announcement	7
ROA	Recorded Overflow Announcement	36
SACP	Semi-Automatic Camp-On	181
SCDR	Station Activity Records	251
SCI	Station Category Indication	80
SCMP	Station Camp-On	121
SECL	Series Call	191
SNR	Stored Number Redial	64
SR	Set Relocation	53
SSAU	Station Specific Authorization Codes	229
SS5	500 Set Dial Access to Features	73
SS25	2500 Set Features	18
SSC	System Speed Call	34
SUPV	Supervisory Attendant Console	93
TAD	Time and Date	8
TBAR	Trunk Barring	132
THF	Trunk Hook Flash (Centrex)	157
TOF	Automatic Call Distribution, Timed Overflow Queuing	111
TVS	Trunk Verification from Station	110
VMBA	Voice Mailbox Administration	246
XCT0	M1 Enhanced Conference, TDS and MFS	204
XCT1	M1 Superloop Administration (LD 97)	205
XPE	Meridian 1 XPE	203

Numerical List of Packages

Listed below is a comprehensive numerical list of available packages which may be equipped on this system. For an alphabetical list of packages, see [“Alphabetical List of Packages” on page 21.](#)

Note: A list of features and services available with this system is located in the *Option 11C Compact Features and Services Guide*.

Number	Mnemonic	Name
0	BASIC	Basic Call Processing
1	OPTF	Optional Features
4	CDR	Call Detail Recording, Teletype Terminal
5	CTY	Call Detail Recording, Teletype Terminal
7	RAN	Recorded Announcement
8	TAD	Time and Date
9	DNDI	Do Not Disturb Individual
10	EES	End-to-End Signaling
11	INTR	Intercept Treatment
12	ANI	Automatic Number Identification
13	ANIR	Automatic Number Identification, Route Selection
14	BRTE	Basic Routing
16	DNDG	Do Not Disturb Group
17	MSB	Make Set Busy
18	SS25	Special Service for 2500 Sets
19	DDSP	Digit Display
20	ODAS	Office Data Administration System
21	DI	Dial Intercom
23	CHG	Charge Account for CDR

Number	Mnemonic	Name
24	CAB	Charge Account/Authorization code
25	BAUT	Basic Authorization code
28	BQUE	Basic Queuing
29	NTRF	Network Traffic must have NWK packages.
32	NCOS	Network Class of Service
33	CPRK	Call Park
34	SSC	System Speed Call
35	IMS	Integrated Message Services. UST and UMG are part of the IMS package.
36	ROA	Recorded Overflow Announcement
37	NSIG	Network Signaling
39	NSC	Network Speed Call
40	BACD	Basic Automatic Call Distribution
41	ACDB	Automatic Call Distribution, Package B
42	ACDC	Automatic Call Distribution, Package C
43	LMAN	Automatic Call Distribution, Load Management Reports
44	MUS	Music
45	ACDA	Automatic Call Distribution, Package A
46	MWC	Message Waiting Center
47	AAB	Automatic Answerback
48	GRP	Group call
49	NFCR	New Flexible Code Restriction
51	LNK	ACDD, Auxiliary Link Processor
52	FCA	Forced Charge Account
53	SR	Set Relocation
55	HIST	History File
56	AOP	Attendant Overflow Position
57	BARS	Basic Alternate Route Selection
58	NARS	Network Alternate Route Selection
59	CDP	Coordinated Dialing Plan
61	FCBQ	Flexible Call Back Queuing
63	NAUT	Network Authorization code
64	SNR	Stored Number Redial
70	HOT	Enhanced Hot Line
71	DHLD	Deluxe Hold

Number	Mnemonic	Name
72	LSEL	Automatic Line Selection
73	SS5	500 Set Dial Access to Features
74	DRNG	Distinctive Ringing
75	PBXI	1.5 Mbit Digital Trunk Interface
76	DLDN	Departmental Listed Directory Number
77	CSL	Command Status Link
79	OOD	Optional Outpulsing Delay
80	SCI	Station Category Information
81	CCOS	Controlled Class of Service
83	CDRQ	ACD CDR Queue Record
87	FTDS	Fast Tone and Digit Switch
88	DSET	M2000 Digital Sets
90	LNR	Last Number Redial
92	PXLT	Pretranslation
93	SUPV	Supervisory Console
95	CPND	Calling Party Name Display
98	DNIS	Dialed Number Identification System
107	MCT	Malicious Call Trace
108	ICDR	Internal CDR
110	TVS	Trunk Verification from Station
111	TOF	Automatic Call Distribution, Timed Overflow Queuing
113	IDC	Incoming Digit Conversion
115	DCP	Directed Call Pickup
117	CBC	Call by Call Service
118	CCDR	Calling Line Identification in Call Detail Recording
119	EMUS	Enhanced Music
121	SCMP	Station Camp-On
125	FTC	Flexible Tones and Cadences
127	BKI	Attendant Break-In/Trunk Offer
132	TBAR	Trunk Barring
133	ENS	Enhanced Night Service
139	FFC	Flexible Feature Codes
140	DCON	M2250 Attendant Console
141	MPO	Multi-Party Operations

Number	Mnemonic	Name
145	ISDN	Integrated Services Digital Network
146	PRA	International Primary Rate Access (CO)
149	IEC	Inter-Exchange Carrier
150	DNXP	DN Expansion (7 digit)
151	CDRE	CDR Expansion (7 digit)
157	THF	Trunk Hook Flash (Centrex)
160	FNP	Flexible Numbering Plan
162	SAR	Scheduled Access Restrictions
164	LAPW	Limited Access to Overlays
170	ARIE	Aries Digital Sets
173	ECCS	Enhanced Controlled Class of Service
174	AAA	Attendant Alternative Answering
178	EOVF	ACD Enhanced Overflow
179	HVS	Meridian Hospitality Voice Service
186	POVR	Priority Override/Forced Camp-On
191	SECL	Series Call
200	AINS	Automatic Installation (Option 11 only)
203	XPE	Meridian 1 XPE
204	XCT0	M1 Enhanced Conference, TDS and MFS
205	XCT1	M1 Superloop Administration (LD 97)
222	MSDL	Multi-purpose Serial Data Link
223	FCC68	FCC Compliance for DID Answer Supervision
229	SSAU	Station Specific Authorization Codes
242	MULTI_USER	Multi-User Login
243	ALRM_FILTER	Alarm Filtering
246	VMBA	Voice Mailbox Administration
247	CALL ID	Call ID (for AML applications)
251	SCDR	Station Activity Records
254	PHTN	Phantom TN
256	ADMINSET	Set Based Administration
258	ATX	Autodial Tandem Transfer
259	CDRX	Enhanced Call Detail Recording
291	NI2	North American National ISDN Class II Equipment
296	MAT	MAT 5.0

Number	Mnemonic	Name
310	CPCI	Called Party Control on Internal Calls
315	OPEN ALARM	Open Alarms

LD 30—Network and Signaling Diagnostic

This program is used to maintain Network loops. It may be run in background, loaded during the daily routines or loaded manually to enter commands.

Program operation

When invoked automatically by the system, the program performs the following tests:

- network memory of each enabled network card
- continuity of the speech path to each PE shelf (for enabled loops only)
- signaling channel to each line or trunk card (on enabled loops only)
- signaling channel through each Integrated Services digital line card to each Digital telephone or data TN
- clock controllers are switched (if either DTI2 or PRI2 are used when LD 30 is run in midnight mode, clock controllers will not be switched)

For the Integrated Voice Messaging System (IVMS), the program does not test Automatic Call Distribution (ACD) positions when the positions belong to IVMS-DN groups.

Digital telephones that pass the signaling test have their date and time updated to match the system clock.

Any SL-1 telephone or card that fails the signaling test may be disabled by this program. Use LD 32 to re-enable them.

If two or more PE cards are disabled on a loop, an NWS101 message is printed without the associated NWS301 messages to indicate card failures. However, the shelves that failed are known from the NWS201 messages. Therefore, the state of the individual cards can be determined by manually retesting using the SHLF command.

If NWS301 indicates a failure of the Peripheral Buffer or Controller card, the message may not be correct. Therefore the card should be retested using the SHLF command.

This program does not test attendant consoles or Automatically Identified Outward Dialing (AIOD) trunks. Equipment which has been disabled due either to overload or manual request is not tested.

How to use LD 30

When invoked manually, the Overlay may be used to:

- conduct a complete test, as when the program is invoked automatically, except for switching the clocks
- conduct a test on a specific PE shelf
- get the enable/disable status of network loops
- enable or disable network loops
- clear alarm indications and the maintenance display
- download peripheral software on superloops
- clear contents of the Controller maintenance display
- read contents of the Controller maintenance display

Basic commands

CDSP	Clear the maintenance display on active CPU to 00 or blank
CMAJ	Clear major alarm and reset power fail transfer
CMIN c	Clear minor alarm indication on attendant consoles for customer c
CMIN ALL	Clear minor alarm indication on all attendant consoles
DISL loop	Disable loop
DISL sl	Disable specified superloop.
END	Abort current test
ENLL loop	Enable network loop
ENLL sl	Enable specified superloop.
LDIS	List disabled loops
LENL	List enabled loops
LOOP loop, ALL	Test network memory on one or all loops
SHLF l s	Test loop l, shelf s
STAT	Get status of all network loops
STAT (loop)	Get status of specified loops
TTSM loop x y z	Test Time Switch Memory (TSM) of a loop
TTWI loop x y z	Test TSM when the timeslot junctor is idle

Superloop commands

The following commands are used with Controllers (NT8D01) and Network Cards (NT8D04 or NT8D18).

CPED I s	Clear contents of Controller maintenance display on loop I shelf s
DISL loop	Disable loop
END	Abort current test
ENLL loop (v)	Enable superloop, download peripheral software version v
LDIS	List disabled loops
LENL	List enabled loops
LOOP loop, ALL	Test network memory on one or all loops
RPED I s	Read contents of the Controller maintenance display
SHLF I s	Test loop I, shelf s
STAT	Get status of all network loops
STAT (loop)	Get status of specified loop
UNTT I s c (u)	Do a signaling test on specified card or unit

Alphabetical list of commands

Command	Description	Pack/Rel
CDSP	Clear the maintenance display on active CPU to 00 or blank.	basic-1
CMAJ	Clear major alarm, reset power fail transfer and clear power fault alarm.	basic-1
CMIN ALL	Clear minor alarm indication on all attendant consoles.	basic-1
CMIN c	Clear minor alarm indication on attendant consoles for customer c.	basic-1
CPED l s	Clear contents of Controller maintenance display on loop l shelf s. This also clears the buffer printed with the command RPED.	xpe-15
DISL loop	Disable loop. All calls in progress on this loop are disconnected. Peripheral cards remain software enabled and no LEDs are lit.	basic-1
DISL sl	Disable specified superloop. Active calls on the superloop specified will be disconnected and line transfer will occur at the remote end.	basic-21
END	Abort current test. If no test is in progress, message NWS002 is output.	basic-1
ENLL loop	Enable network loop. This enables the network, performs a network memory test and tests continuity and signaling to all shelves on the loop. If it passes the test, OK is output. This does not re-enable any disabled cards on the loop. Use LD 32 ENLS or ENXP commands or enable each card individually. When enabling a network loop serving ISDL cards, the ISDL cards must be individually disabled, then re-enabled to ensure that service is restored to digital telephones. Service may also be restored to digital telephones by disconnecting and then reconnecting the telephone's line cord.	basic-1

ENLL loop (v)	Enable superloop, download peripheral software version v. If version v is not specified, the software downloaded is current (c) or latest (l) version as defined in LD 97.	xpe-15
ENLL sl	Enable specified superloop. OK is output if superloop has been enabled. Establishing service of individual voice-and-data-capable carriers is dependant on the F/W state of that carrier.	basic-21
LDIS	List disabled loops. Response is: 11, 12, 1n: loop is a disabled loop, or NONE: if no cards are disabled.	basic-1
LENL	List enabled loops. Response is: 11, 12, 1n: l is an enabled loop, or NONE: if no cards are enabled.	basic-1
LOOP loop, ALL	Test network memory on one or all loops. Performs a network memory test, continuity test and signaling test on the specified loop, which can be either a value from 0 to 159 or ALL. If ALL is specified, every loop currently enabled is tested. All shelves on each loop are tested (except for attendant consoles). If no errors are detected, OK is output. With X11 Release 20 and later, this command is used for XOPS cards. Out-of-Service units are not tested when this command is used. The range for units is 0-31, but only 0-7 are allowed on the XOPS card.	basic- 20
RPED l s	Read contents of the Controller maintenance display. This command lists the current and last 15 clock tracking states of the NT8D01 Controller. The tracking is indicated on the Controller maintenance display. The possible tracking modes are: C0 = Controller is tracking to the network connected to port 0. C1 = Controller is tracking to the network connected to port 1. C2 = Controller is tracking to the network connected to port 2. C3 = Controller is tracking to the network connected to port 3. CF = Controller is not tracking any network. See HEX messages for the interpretation of Controller maintenance display codes.	xpe-15

SHLF I s	Test loop I, shelf s. Performs a network memory test, continuity test and signaling test only on loop I shelf s. All line cards, idle trunk cards (except AIOD trunks) and idle SL-1 telephones are tested. If no errors are detected, OK is output. With X11 Release 20 and later, this command is used for XOPS cards. Out-of-service units are not tested when this command is used.	basic- 20
SLFT I s c	Invoke self-test for ISDN BRI line card. The card must be disabled.	bri-18
SLFT I s c type	Self-test ISDN BRI line card. The card must be disabled. Response is: NWS637 selftest passed, or NWS632 selftest failed, where: I = loop s = shelf c = card type = self-test type (Long or Short)	rsc/bri-19
SLFT loop type	Invoke self-test for MISP card. The comprehensive test is run automatically when the MISP is enabled. The card must be disabled. Response is: NWS632 self-test failed or NWS637 self-test passed type = 1 (comprehensive), or type = 2 (power-on-reset)	bri-18
STAT	Gives status of network loops (circuits), indicating how many are enabled and how many are disabled. Response is: x ENBL, y DSBL	basic-1

STAT loop	Get status of a network loop. Response is one of the following: 1. UNEQ = loop is unequipped. 2. DSBL: RESPONDING = loop is disabled and the Network card is responding. The loop may have been disabled because of: - a DISL command - b associated Peripheral Signaling (PS) card is disabled - c overload condition on associated loop. In this case an OVD message is output. An attempt to enable the loop may result in a recurrence of the overload. 3. DSBL: NOT RESPONDING = loop is disabled and the Network card is not responding. The card is missing, disabled by the faceplate switch or is faulty. 4. x BUSY, y DSBL = loop is enabled with x channels busy, y channels disabled. 5. CTYF 11, 12... = loop specified in the STAT command cannot receive speech from one or more loops (11, 12). This usually indicates the LD 30 continuity test failed. Probable fault is the network card.	basic-1
STEI l s c d	Query the Terminal Endpoint Identifiers, and their corresponding USIDs This command queries the TEIs, and their corresponding USIDs on the specified DSL with an established D-channel data link layer with the MISP. Output looks like: <pre> MISP 111 TEI USID --- ---- nnn nnnn </pre>	brsc-19
TEIT l s c d	Perform TEI check on Digital Subscriber Loop d (0-7). This test is carried out on a single specified DSL interface. It checks the existence of the defined TEIs and any possible duplication of TEIs. Duplicate TEIs are removed by the layer 2 task on the MISP.	bri-18

TTSM loop x y z basic-1

Test Time Switch Memory (TSM) of a loop.

Tests the Time Switch Memory (TSM) of the network card.

Where:

loop = the network loop that may have a faulty TSM.

x = the network loop of the transmitting party.

y = the junctor used on the transmitting side of the call. Its value has a range of 0 to 7, unless the two loops are in the same group, in which case the junctor value to be entered is 15.

z = the timeslot used on the transmitting side of the call. Its value has a range of 2 to 31.

The values normally used in this command are the same values that appeared in the ERR3036 or ERR3037 message during call processing.

TTWI loop x y z basic-1

Test TSM when the timeslot junctors are idle. The command is usually used if error message NWS800 is output in response to TTSM.

Where:

loop = the network loop that may have a faulty TSM.

x = the loop ID (range 0 to 159) of the transmitting party.

y = the junctor used on the transmitting side of the call. Its value has a range of 0 to 7, unless the two loops are in the same group, in which case the junctor value to be entered is 15.

z = the timeslot (2-31) used on the transmitting side of the call.

This command waits for the timeslot z and junctor y to become available and will then execute the command.

UNTT l s c (u) xpe- 20

Do a signaling test on specified card or unit. This command applies only to superloops.

With X11 Release 20 and later, this command is used for XOPS cards. Out-of-service units are not tested when this command is used. The range for units is 0-31, but only 0-7 are allowed on the XOPS card.

LD 31—Telephone and Attendant Console Diagnostic

This program tests the keys and lamps of telephone sets and attendant consoles. The tests consist of pressing keys on a telephone and checking for the correct response. This diagnostic cannot be used for testing the DISPLAYPHONE 1200, or M3000.

After loading the program, any telephone in the system may invoke the test by dialing SPRE 92, (SPRE is the Special Service Prefix Code for the customer). No further inputs from the TTY are needed. If commands are input, the system responds with TRM001 indicating an invalid command.

To start the test:

- 1** Load program 31.
- 2** Dial SPRE 92 from the telephone to be tested.
- 3** Perform the steps given in the appropriate Table. The expected responses for LCD lamps, displays and tones are given. Each key need only be operated momentarily.

The volume keys (VOL UP and VOL DOWN) have eight levels. The level is adjusted by operating a key once for a change in one level. These keys control the audible level for ring volume, buzz volume and speech/tone volume.

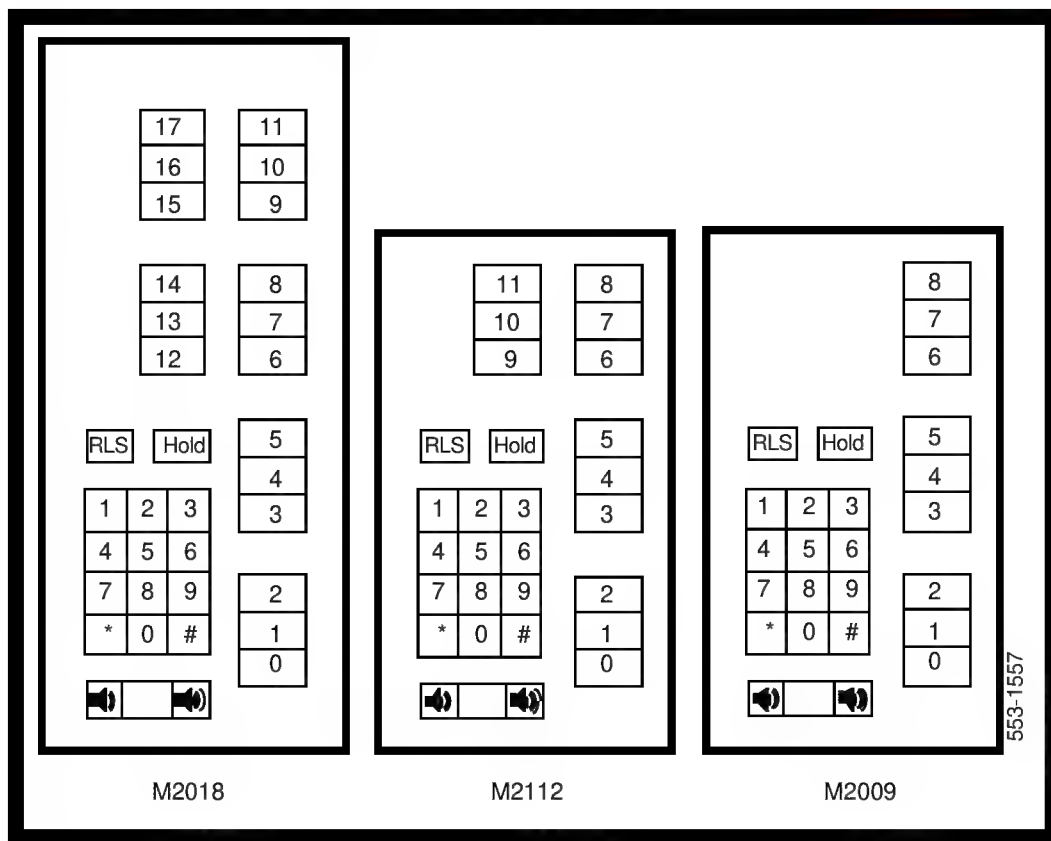
Note 1: When enabling a network loop with ISDL packs, the ISDL packs must be individually disabled and then re-enabled to restore service to digital telephones. Service may also be restored to digital telephones by disconnecting then reconnecting the telephone's line cord.

Note 2: Terminal diagnostics are provided by the M3000 itself. Refer to Meridian M3000 Description, Installation, Operation & Maintenance (553-2201-115).

M2009, M2018 and M2112 Telephone test

The M2000 key and lamp layout is shown in [Figure 1](#). The test is provided in [Table 5](#).

Figure 1
M2000 Series Digital Telephone Key and LCD Layout



M2009, M2018, and M2112 Telephone test

After dialing the SPRE code 92, the M2009 telephone shows all LEDs lit and the display shows all 8's. For the M2018 and M2112, press the "*" key first.

Table 5
M2009, M2018, and M2112 Telephone test

Step	Key operated	LCD location and response	Display and Tones
1	Handset off-hook	All LCDs flash	blank display
2	Handset on-hook	All LCDs fast flash	blank display
3	Handset off-hook	All LCDs lit	blank display
4	Handset on-hook	All LCDs off	blank display
5	Dial Pad key 1	LCD 0 lit	1
6	Dial Pad key 2	LCD 1 lit	12
7	Dial Pad key 3	LCD 2 lit	123
8	Dial Pad key 4	LCD 3 lit	1234
9	Dial Pad key 5	LCD 4 lit	12345
10	Dial Pad key 6	LCD 5 lit	123456
11	Dial Pad key 7	LCD 6 lit	1234567
12	Dial Pad key 8	LCD 7 lit	12345678
13	Dial Pad key 9	LCDs 0 & 7 lit	123456789
14	Dial Pad key 0	LCDs 1 & 7 lit	1234567890
15	Dial Pad key *	All LCDs lit (except M2112) LCD 6 lit (M2112)	8888888888888888
16	Dial Pad key # Dial Pad key *	All LCDs off (except M2112) LCD 7 lit (M2112)?	blank display
17	Fixed key 0	LCD 0 lit	
18	Fixed key 1	LCD 1 lit	
19	Fixed key 2	LCD 2 lit	
20	Fixed key 3	LCD 3 lit	
21	Fixed key 4	LCD 4 lit	

Table 5
M2009, M2018, and M2112 Telephone test

Step	Key operated	LCD location and response	Display and Tones
22	Fixed key 5	LCD 5 lit	
23	Fixed key 6	LCD 6 lit	
24	Fixed key 7	LCD 7 lit	
25	Fixed key 8	LCD 8 lit	
26	Fixed key 9	LCD 9 lit	
27	Fixed key 10	LCD 10 lit	
28	Fixed key 11	LCD 11 lit	
29	Fixed key 12	LCD 12 lit	
30	Fixed key 13	LCD 13 lit	
31	Fixed key 14	LCD 14 lit	
32	Fixed key 15	LCD 15 lit	
33	Fixed key 16	LCD 16 lit	
34	Fixed key 17	LCD 17 lit	
35	HLD key	LCDs 0 to 4 lit	Dial tone
36	Handset off-hook	all LCDs flash	Dial tone from handset only
37	Handset on-hook	all LCDs fast flash	Dial tone from speaker
38	Handsfree key	LCD 0 to 2 lit	

The M2006 and M2008 faceplate is shown in [Figure 2](#). The M2006 test is provided in [Table 6](#). The M2008 test is provided in [Table 7](#).

Diagram illustrating the front panel components of a telephone unit:

- Switchhook
- RLS key
- Hold Key
- Volume control
- Filler plate or digit display (M2008 only)
- Speaker
- Message Waiting lamp
- M2008 only (indicated by a bracket)
- Function keys and LCDs (indicated by a bracket)
- Prime DN

Table 6
Meridian M2006 Telephone test

Step	Key operated	LCD location and response	Display and Tones
Feature keys:			
1	Key 0	LCD 0 lit	
2	Key 1	LCD 1 lit	
3	Key 2	LCD 2 lit	
4	Key 3	LCD 3 lit	turn on Message Waiting LED
5	Key 4	LCD 4 lit	turn off Message Waiting LED
6	Key 5	LCD 5 lit, (if key 5 is not a Program key for data option)	
Keypad keys:			
7	Key 1	LCD 0 lit	
8	Key 2	LCD 1 lit	
9	Key 3	LCD 2 lit	
10	Key 4	LCD 3 lit	
11	Key 5	LCD 4 lit	
12	Key 6	LCD 0 and 4 lit	
13	Key 7	LCD 1 and 4 lit	
14	Key 8	LCD 2 and 4 lit	
15	Key 9	LCD 3 and 4 lit	
16	Key 0	LCD 1 and 4 lit	
17	Key *	all LCDs lit	
18	Key #	all LCDs off	
Fixed keys:			
19	HLD	LCD 0 to 4 lit	dial tone
20	Release	all LCDs off	
21	Off-hook	all LCDs flash	dial tone from handset only
22	On-hook	all LCDs fast flash	dial tone form speaker

LD 31

Table 6
Meridian M2006 Telephone test

Step	Key operated	LCD location and response	Display and Tones
23	Off-hook	all LCDs lit	
24	On-hook	all LCDs off	
25	HLD	LCD 0 to 4 lit	buzzer
26	HLD	end of test	

Table 7
Meridian M2008 Telephone test

Step	Key operated	LCD location and response	Display and Tones
Feature keys:			
1	Key 0	LCD 0 lit	display upper case letters
2	Key 1	LCD 1 lit	display lower case letters
3	Key 2	LCD 2 lit	display clear
4	Key 3	LCD 3 lit	display darkens
5	Key 4	LCD 4 lit	top line of display darkens
6	Key 5	LCD 5 lit	turn Message Waiting LED on
7	Key 6	LCD 6 lit	turn Message Waiting LED off
8	Key 7	LCD 7 lit	
Keypad keys:			
9	Key 1	LCD 0 lit	1 on display
10	Key 2	LCD 1 lit	2 on display
11	Key 3	LCD 2 lit	3 on display
12	Key 4	LCD 3 lit	4 on display
13	Key 5	LCD 4 lit	5 on display
14	Key 6	LCD 5 lit	6 on display
15	Key 7	LCD 6 lit	7 on display
16	Key 8	LCD 0 and 6 lit	8 on display
17	Key 9	LCD 1 and 6 lit	9 on display
18	Key 0	LCD 2 and 6 lit	0 on display
19	Key *	all LCDs lit	bottom line of display darkens
20	Key #	all LCDs off	display clear

LD 31

Table 7
Meridian M2008 Telephone test

Step	Key operated	LCD location and response	Display and Tones
Fixed keys:			
21	HLD	LCD 0 to 4 lit	
22	Release	all LCDs off	display clear
23	Off-hook	all LCDs flash	dial tone from handset only
24	On-hook	all LCDs fast flash	dial tone from speaker
25	Off-hook	all LCDs lit	display darkens
26	On-hook	all LCDs off	display clear
27	HLD	LCD 0 to 4 lit	buzzer
28	HLD	end of test	

M2216, M2016S and M2616 Telephone test

The set faceplate is shown in [Figure 3](#). The M2216 test is provided in [Table 8](#). The M2016S and M2616 set test is provided in [Table 9](#).

Figure 3
M2216, M2016S and M2616 set

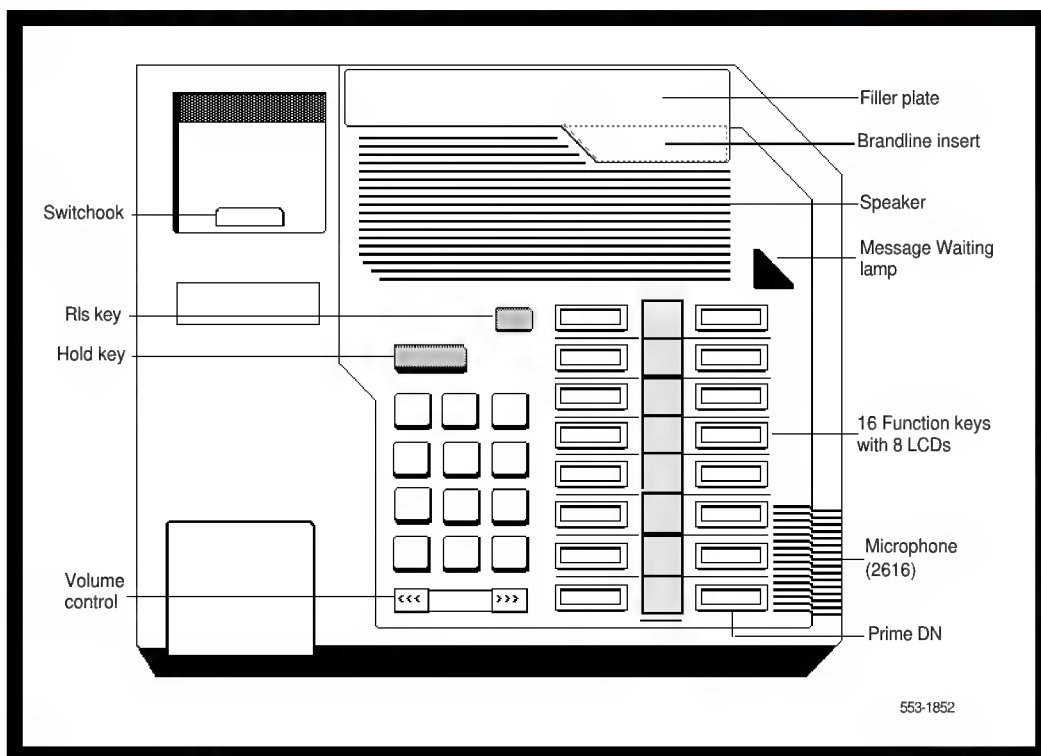


Table 8
M2216 Telephone test

Step	Key operated	LCD location and response	Display and Tones
Note: Do not test key 7			
Feature keys:			
1	Key 0	LCD 0 lit	display upper case letters
2	Key 1	LCD 1 lit	display lower case letters
3	Key 2	LCD 2 lit	display clear
4	Key 3	LCD 3 lit	display darkens
5	Key 4	LCD 4 lit	top line of display darkens
6	Key 5	LCD 5 lit	turn Message Waiting LED on
7	Key 6	LCD 6 lit	turn Message Waiting LED off
8	Key n>7	LCD n lit	
Keypad keys:			
9	Key 1	LCD 0 lit	1 on display
10	Key 2	LCD 1 lit	2 on display
11	Key 3	LCD 2 lit	3 on display
12	Key 4	LCD 3 lit	4 on display
13	Key 5	LCD 4 lit	5 on display
14	Key 6	LCD 5 lit	6 on display
15	Key 7	LCD 6 lit	7 on display
16	Key 8	LCD 0 and 6 lit	78 on display
17	Key 9	LCD 1 and 6 lit	9 on display
18	Key 0	LCD 2 and 6 lit	0 on display
19	Key *	all LCDs lit	bottom line of display darkens
20	Key #	all LCDs off	display clear
Fixed keys:			
21	HLD	LCD 0 to 4 lit	dial tone
22	HLD	LCD 0 to 4 lit	buzzer
23	HLD	end of test	

Table 9
M2016S and M2616 Telephone test

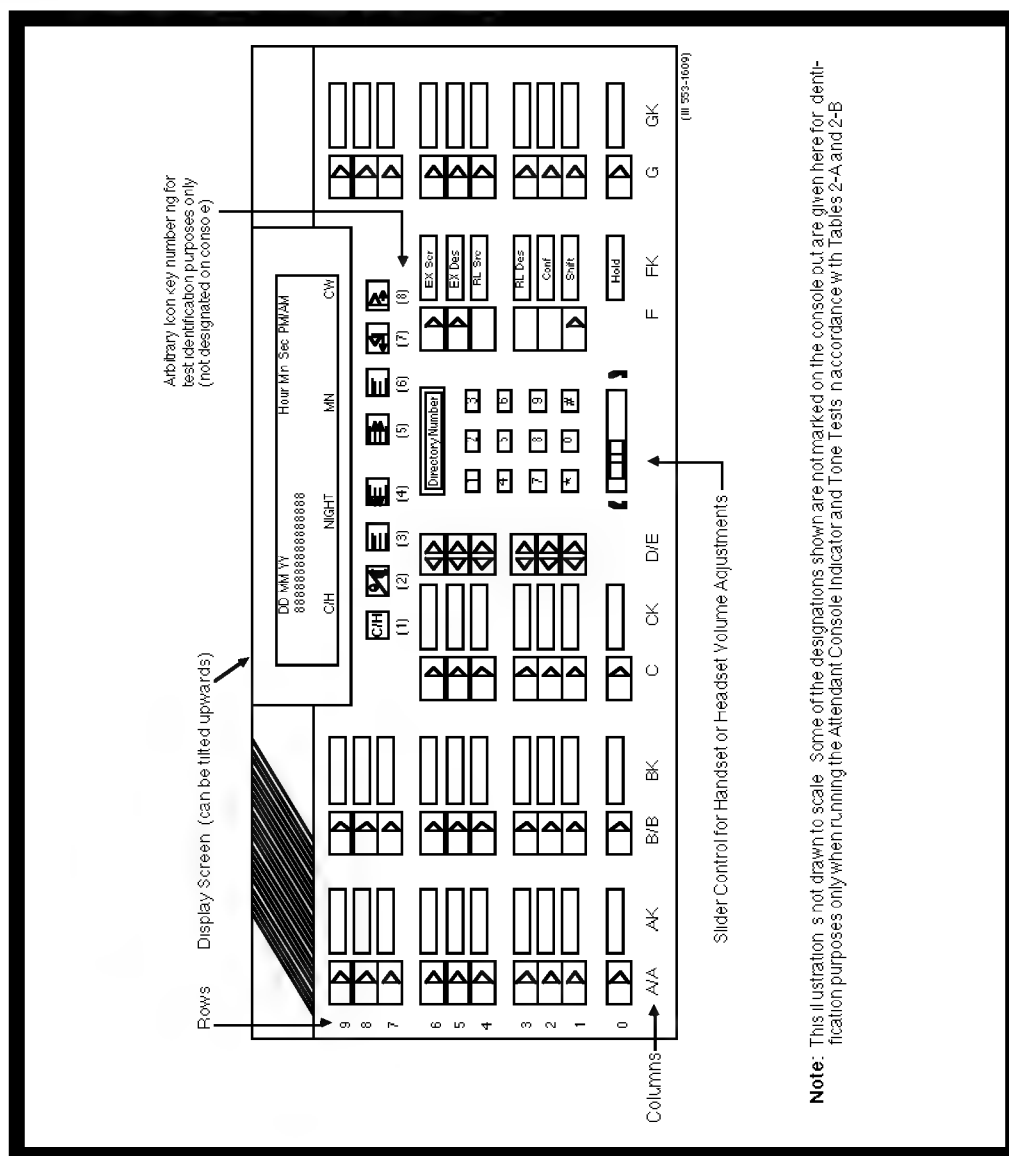
Step	Key operated	LCD location and response	Display and Tones
Note: Do not test key 7			
Feature keys:			
1	Key 0	LCD 0 lit	display upper case letters
2	Key 1	LCD 1 lit	display lower case letters
3	Key 2	LCD 2 lit	display clear
4	Key 3	LCD 3 lit	display darkens
5	Key 4	LCD 4 lit	top line of display darkens
6	Key 5	LCD 5 lit	turn Message Waiting LED on
7	Key 6	LCD 6 lit	turn Message Waiting LED off
8	Key n>7	LCD n lit	
Keypad keys:			
9	Key 1	LCD 0 lit	1 on display
10	Key 2	LCD 1 lit	2 on display
11	Key 3	LCD 2 lit	3 on display
12	Key 4	LCD 3 lit	4 on display
13	Key 5	LCD 4 lit	5 on display
14	Key 6	LCD 5 lit	6 on display
15	Key 7	LCD 6 lit	7 on display
16	Key 8	LCD 0 and 6 lit	8 on display
17	Key 9	LCD 1 and 6 lit	9 on display
18	Key 0	LCD 2 and 6 lit	0 on display
19	Key *	all LCDs lit	top line of display darkens
20	Key #	all LCDs off	display clear
Fixed keys:			
21	Handsfree	LCD 15 lit (with no display) LCD 0-2 lit (with display)	
22	Release	all LCDs off	

LD 31

Table 9
M2016S and M2616 Telephone test

Step	Key operated	LCD location and response	Display and Tones
23	HLD	LCD 0 to 4 lit	dial tone from speaker
24	Off-hook	all LCDs flash	dial tone from handset
25	On-hook	all LCDs fast flash	dial tone from speaker
26	Off-hook	all LCDs lit	display darkens
27	On-hook	all LCDs off	display clear
28	HLD	LCD 0 to 4 lit	buzzer
29	HLD	end of test	

Figure 4
M2250 Console — Key and LCD Layout



M2250 Console

Table 10

M2250 Console

Step	Key operated	LCD location and response	Display and Tones
1	Select idle loop key		
2	Enter SPRE code 92	All LCDs lit except F1	888888888888888888... 888888888888888888...
3	Press dial pad #	All off	Active
4	Press dial key 1	D1 lit	1
5	Press dial key 2	E1 lit	12
6	Press dial key 3	D2 lit	123
7	Press dial key 4	E2 lit	1234
8	Press dial key 5	D3 lit	12345
9	Press dial key 6	E3 lit	123456
10	Press dial key 7	D4 lit	1234567
11	Press dial key 8	E4 lit	12345678
12	Press dial key 9	D5 lit	123456789
13	Press dial key 0	E5 lit	1234567890
14	Repeat step 4 until both lines of the display are full		12345678901234567... 12345678901234567...
15	Press dial pad *	All LCDs lit except F1	888888888888888888... 888888888888888888...
16	Press dial pad #	All LCD blank	ACTIVE
17	Press AK key 0	A0 lit	ABCDEFGHIJKLMN... NOPQRSTUVWXYZAB...
18	Press AK key 1	A1 lit	abcdefghijklmnopqrstuv wnopqrstuvwxyzabcde
19	Press AK key 2	A2 lit	Display shows series of dark squares
20	Press AK key 3	A3 lit	ACTIVE
21	Press AK key 4	A4 lit	ACTIVE

Table 10
M2250 Console

Step	Key operated	LCD location and response	Display and Tones
22	Press AK key 5	A5 lit	ACTIVE
23	Press AK key 6	A6 lit	ACTIVE
24	Press AK key 7	A7 lit	ACTIVE
25	Press AK key 8	A8 lit	ACTIVE
26	Press AK key 9	A9 lit	ACTIVE
27	Press BK key 0	B0 lit	ACTIVE
28	Press BK key 1	B1 lit	ACTIVE
29	Press BK key 2	B2 lit	ACTIVE
30	Press BK key 3	B3 lit	ACTIVE
31	Press BK key 4	B4 lit	ACTIVE
32	Press BK key 5	B5 lit	ACTIVE
33	Press BK key 6	B6 lit	ACTIVE
34	Press BK key 7	B7 lit	ACTIVE
35	Press BK key 8	B8 lit	ACTIVE
36	Press BK key 9	B9 lit	ACTIVE
37	Press CK key 0	C0 lit	IDLE
38	Press CK key 1	C1 lit	ACTIVE
39	Press CK key 2	C2 lit	ACTIVE
40	Press CK key 3	C3 lit	ACTIVE
41	Press CK key 4	C4 lit	ACTIVE
42	Press CK key 5	C5 lit	ACTIVE
43	Press CK key 6	C6 lit	ACTIVE
44	Press Icon key 1		C/H and ACTIVE
45	Press Icon key 2		BUSY
46	Press CK key 0	C1 lit	IDLE
47	Press GK key 0	GO lit	ACTIVE

Table 10
M2250 Console

Step	Key operated	LCD location and response	Display and Tones
48	Press GK key 1	G1 lit	ACTIVE
49	Press GK key 2	G2 lit	ACTIVE
50	Press GK key 3	G3 lit	ACTIVE
51	Press GK key 4	G4 lit	ACTIVE
52	Press GK key 5	G5 lit	ACTIVE
53	Press GK key 6	G6 lit	ACTIVE
54	Press GK key 7	G7 lit	ACTIVE
55	Press GK key 8	G8 lit	ACTIVE
56	Press GK key 9	G9 lit	ACTIVE
57	Press FK key 1	G9 and F1 lit	[S] ACTIVE
58	Press AK key 0	A0 and F1 lit	[S] ACTIVE
59	Press AK key 1	A1 and F1 lit	[S] ACTIVE
60	Press AK key 2	A2 and F1 lit	[S] ACTIVE
61	Press AK key 3	A3 and F1 lit	[S] ACTIVE
62	Press AK key 4	A4 and F1 lit	[S] ACTIVE
63	Press AK key 5	A5 and F1 lit	[S] ACTIVE
64	Press AK key 6	A6 and F1 lit	[S] ACTIVE
65	Press AK key 7	A7 and F1 lit	[S] ACTIVE
66	Press AK key 8	A8 and F1 lit	[S] ACTIVE
67	Press AK key 9	A9 and F1 lit	[S] ACTIVE
68	Press GK key 0	G1 and F1 lit	[S] ACTIVE
69	Press GK key 1	G2 and F1 lit	[S] ACTIVE
70	Press GK key 2	G3 and F1 lit	[S] ACTIVE
71	Press GK key 3	G4 and F1 lit	[S] ACTIVE
72	Press GK key 4	G4 and F1 lit	[S] ACTIVE
73	Press GK key 5	G5 and F1 lit	[S] ACTIVE

Table 10
M2250 Console

Step	Key operated	LCD location and response	Display and Tones
74	Press GK key 6	G6 and F1 lit	[S] ACTIVE
75	Press GK key 7	G7 and F1 lit	[S] ACTIVE
76	Press GK key 8	G8 and F1 lit	[S] ACTIVE
77	Press GK key 9	G9 and F1 lit	[S] ACTIVE
78	Press Hold key	F1 and B0-4 lit	[S] Busy tone in handset
79	Press Hold key	F1 and B0-4 lit	[S] Buzz in speaker
80	Press Hold key	F1 and C0 lit	[S] NIGHT or BUSY
81	Press CK key 1	F1 and C1 lit	[S] NIGHT or BUSY
82	Dial SPRE 92	All LCDs lit	888888888888888888. . . 888888888888888888. . .
83	Press dialpad #	F1 lit	[S] ACTIVE
84	Press FK key 1		ACTIVE
85	Press FK key 2	All LCDs lit except F1	888888888888888888. . . 888888888888888888. . .
86	Press FK key 2	LCDs Flash at 120 ipm	Flash ACTIVE/NIGHT
87	Press FK key 2	LCDs Flash at 60 ipm	Flash ACTIVE/NIGHT
88	Press FK key 2	LCDs Flash at 30 ipm	Flash ACTIVE/NIGHT
89	Press Icon key 8	All LCDs off	ACTIVE
90	Press Icon key 7	B0-4 lit	ACTIVE, dial tone
91	Press FK key 5	All LCDs off	ACTIVE, dial tone
92	Press Icon key 7	B0-4 lit	ACTIVE
93	Press FK key 5	All LCDs off	ACTIVE
94	Press FK key 6	B0-4 lit	ACTIVE
95	Press FK key 6	All LCDs off	ACTIVE
96	Handset out	All LCDs off	ACTIVE
97	Handset in	B0-4 lit	ACTIVE
98	Handset out	All LCDs off	ACTIVE

LD 31

Table 10
M2250 Console

Step	Key operated	LCD location and response	Display and Tones
99	Handset in other side of console	B0-4 lit	ACTIVE
100	Press Hold key	B0-4 lit	ACTIVE, busy tone
101	Press Hold key	B0-4 lit	ACTIVE, Buzz in speaker
102	Press Hold key	C0 lit	NIGHT
103	End of test		

LD 32—Network and Peripheral Equipment Diagnostic

LD 32 performs checks and maintenance functions on network and Peripheral Signaling equipment. LD 32 will allow commands to be used for XTD cards. The STAT command will produce an output which has XTD, LDC or LGD appended where required.

this program is used to:

- get the status of Peripheral Signaling (PS), Controller and network cards
- get the status of PE shelves cards and units
- disable and enable PS, Controller and network cards
- disable and enable PE shelves, cards and units
- test message waiting lamps on 500/2500 sets
- test Message Waiting Lamps (MWL) on 2500 sets during midnight routines
- print set and card IDs on superloops
- convert packed TNs in hex to the loop, shelf, card, unit format

Note 1: Disabled DID trunks are placed in the answer state while disabled.

Note 2: If Recorded Telephone Dictation (RTDT) cards are to be software enabled or disabled, the Out-of-Service (OS) lead should be connected to ground. On completion of the task, ground can be removed.

Note 3: Card ID information is presented as follows:

CCCCCCCC-RRSSSS

Where:

Note 4: CCCCCCCC = is the order code

RR = is the release number

SSSS = is the serial number
After making any changes to the route data block, IPE TRUNK CARDS MUST BE DOWNLOADED by issuing the ENLC l s c command.

Note 5: When getting the status of a card relating to a trunk error (STAT), the term RVSD may appear with the trunk information. RVSD indicates that the software detected a reversed wired trunk for that unit.

Overlay 32 Linkage

Overlay programs 10, 11, 20 and 32 are linked, thus eliminating the need to exit one Overlay and enter another. Once one of the aforementioned Overlays has been loaded, it is possible to add, print and obtain the status of a set without having to exit one Overlay and load another.

Input processing has also been enhanced. Prompts ending with a colon (:) allow the user to enter either:

- 1 a question mark (?) followed by a carriage return (<cr>)
This entry will present you with a list of valid responses to that prompt.
- 2 An abbreviated response
The system responds to this entry with the nearest match. If there is more than one possible match, the system responds with SCH0099, the input followed by a question mark, and a list of possible responses. The user can then enter a valid response.

Using Enable/Disable commands

All units on a loop go into maintenance busy mode when disabled using the DISL command. The shelves on a loop must be individually re-enabled via the ENLS command. Any telephones that were in lockout mode show as idle, then go into lockout mode again 30 seconds after any unit on the shelf requests dial tone.

When enabling a network loop serving ISDL cards, the ISDL cards must be individually disabled then re-enabled to ensure that service is restored to digital telephones. Service may also be restored to digital telephones by disconnecting, and then reconnecting the telephone's line cord.

Basic commands

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Basic commands

CDSP	Clear the maintenance display on active CPU to 00 or blank
CMIN	Clear the minor lamp on a system basis
CMIN ALL	Clear minor alarm indication on all attendant consoles
CONV tn	Convert packed TN (in hex) to loop, shelf, card and unit format
CONV l s c u	Convert loop, shelf, card and unit format to packed TN (in hex)
DISC l s c	Disable specified DTR/MFR card
DISI l s c	Disable specified card when it is idle
DISL loop	Disable network loop
DISR l s c u	Disable specified DTR/MFR card or unit
DISN loop	Disable network card containing specified loop
DISS l s	Disable specified shelf
DISU l s c u	Disable specified unit
DSCT l	Disable automatic background continuity tests for superloop
DSNW loop	Disable network card containing specified loop
DSPS x	Disable Peripheral Signaling card x
DSXP x	Disable controller x and all connected cards
END	Abort current test
ENLC l s c	Enable and reset specified DTR/MFR card
LBSY l s	List TNs of all busy units on specified shelf
LDIS l s	List TNs of all disabled units on specified shelf
LIDL l s	List TNs of all idle units on specified shelf

LLBD l s	List TNs of 500/2500 sets with defective MWLs
LMNT l s	List TNs of all maintenance busy units on specified shelf
MFR l s c u	Test specified MFR card or unit.
MFR l	Test all MFR units on loop l.
MFR <cr>	Test all MFR units
PBXH	Message Waiting lamp maintenance
PBXT ALL	Test all Message Waiting lamps
PBXT l (s c u)	Test Message Waiting lamps on loop (or shelf or card or unit)
SDLC l s c	Get status of specified ISDLC card
SDTR l s c u	List status of specified DTR/MFR card or unit.
SDTR <cr>	List the TN of all disabled DTR/MFR units
STAT	Get status of all configured loops in system
STAT (loop)	Give status of one or all loops
TRK l s c u	Seize specified trunk for outpulsing

Superloop commands

DISL sl	Disable specified superloop
DSCT sl	Disable automatic background continuity tests for a superloop
DSXP x	Disable Controller x and all associated PE cards
IDC I s c	Print card ID for PE card
IDCS x	Print card ID for all cards on shelf controlled by Controller x
IDUc u	Print set ID
LBSY I s	List TNs of all busy units on specified shelf
LDIS I s	List TNs of all disabled units on specified shelf
LIDL I s	List TNs of all idle units on specified shelf
STAT sl	Get status of superloop and separate carriers on that superloop
SUPL (sl)	Print data for one or all superloops

Alphabetical list of commands

Command	Description
CDSP	Clear the maintenance display on active CPU to 00 or blank.
CMIN	Clear the minor lamp on a system basis.
CMIN ALL	Clear minor alarm indication on all attendant consoles.
CMIN c	Clear minor alarm indication on attendant consoles for customer c.
CONV tn, CONV I s c u	Convert packed TN (in hex) to I s c u, or vice versa. The command format is: CONV tn - convert packed TN CONV I s c u - convert unpacked TN
CPWD I s c u	Clear directory password for M3000 set. Allows the M3000 Directory password of the specified M3000 set to be cleared. This allows a user to access the M3000 Directory if the password has been forgotten or if the user wants to change the current password.
DIS AUTO I s c u	Disable automatic link recovery option of a DSL.
DISC (BASE) I s c	Disable specified BRSC card. This command is also used to disable the ISDN Basic Rate Interface Signaling Concentrator (BRSC) card. Where: BASE = Disable only the basecode. If not specified, both the basecode and application are disabled. The application is disabled first unless BASE is entered. I = loop s = shelf c = card The card faceplate LED is turned on to indicate the card is disabled, and the IPC channel is eliminated. The "." prompt is given when the process is complete.

- DISC BRI l s c** Disable the BRSC ISDN BRI application. Where:
- BRI = the BRSC ISDN BRI application
 - l = loop
 - s = shelf
 - c = card
- All active and transient ISDN BRI calls are dropped, and all signaling and packet channels are torn down. The DSL software state remains the same, but the ISDN BRI line cards receive a disable message.
- DISC l s c** Disable specified DTR/MFR card.
- If BRI reference clock source is configured on this SILC the user will be prompted with:
- CLOCK SOURCE ON DSL #, PROCEED? ,
- where # = unit 0-7
- DISI l s c** Disable specified card when it is idle.
- If BRI reference clock source is configured on this SILC the user will be prompted with:
- CLOCK SOURCE ON DSL #, PROCEED? ,
- where # = unit 0-7
- DISL (appl) loop** Disable application on MISP loop. Where appl =
- BRIL (Basic Rate Interface Line), or
 - BRIT (Basic Rate Interface Trunk)
- DISL (appl) loop 1** Disable MISP loop.
- Where: appl =BRIL (Basic Rate Interface Line), BRIT (Basic Rate Interface Trunk), or BRIE (UIPE Basic Rate Interface Trunk).
- DISL (appl) loop (FDL)**
- Disable MISP application and loop. Where:
- appl = optional application name (BRIL)
 - loop = loop number
 - FDL = force download the application
- Entering 1 rather than FDL force downloads the application.

DISL loop	Disable network loop. See “Using the Enable/Disable commands” in the introduction. This command is also used for superloops and MISPs.
DISL sl	Disable specified superloop. Active calls on the superloop will be disconnected and line transfer will occur at the remote end.
DISN loop	Disable network card containing specified loop, where “loop” is the number of the even or odd loop. Not applicable to superloops.
DISR l s c u	Disable specified DTR/MFR card or unit. The LED should be lit on the XMFR card in response to this command.
DISS l s	Disables specified shelf. See “Using the Enable/Disable commands” in the introduction.
DISU BRI l s c	Disable ISDN BRI BRSC card.
DISU l s c d	Disable specified Digital Subscriber Loop 0-7. If BRI reference clock source is configured on the DSL the user will be prompted with: CLOCK SOURCE ON THIS DSL, PROCEED?
DISU l s c u	Disable specified unit. See “Using the Enable/Disable commands” in the introduction.

DLIF loop x	Download an UIPE BRI trunk interface data file to a MISP loop. The MISP specified must have the BRIT UIPE loadware application. Where x may be: (0) = UIPE SL1 1 = ETSI QSIG 2 = ISO QSIG . . 28 = ETSI QSIG GF 29 = ISO QSIG GF To achieve a successful download: 1. the MISP basecode must be enabled 2. the specified MISP must have the UIPE BRI trunk loadware configured 3. the interface must be inactive (interpret this to mean that either the UIPE BRI trunk application must be disabled or no DSL of this interface type can be enabled)
DSCT loop	Disable automatic background continuity tests for a superloop.
DSIF L PDL2 I s c	Disables the SAPI 16 interface number for BRSC on I s c for the MPH on loop L.
DSIF L PDL2 L1	Disables SAPI 16 interface number for BRIL on Loop L1 for MPH on loop L.
DSIF I s c DSL BCH x	Disables the link interface for B-channel x for DSL I s c bch. Where: x = 1–2
DSIF I s c DSL DCH x	Disables the link interface number for USID x for the DSL on I s c dch.
DSIF loop PDNI Y	Disable the link interface number Y for PDNI on Loop Y (1-3)
DSNW loop	Disable network card containing specified loop, where “loop” is the number of the even or odd loop. Not applicable to superloops.

DSPS x Disables Peripheral Signaling (PS) card x and loops serviced by the card. Disabling PS card 0 interrupts service on loops 0 to 15. To re-enable the card, use the ENPS x command.

If this fails, a system initialization may be required. Use the disable command with discretion. Disabling a PS card disables up to 16 loops.

The following lists the group/PS/loop relationship:

<u>Group</u>	<u>PS</u>	<u>Loops</u>
0	0	0 to 15
0	1	16 to 31
1	2	32 to 47
1	3	48 to 63
2	4	64 to 79
2	5	80 to 95
3	6	96 to 111
3	7	112 to 127
4	8	128 to 143
4	9	144 to 159

DSRB l s c d Disable Remote Loop Back for specified BRI Trunk DSL

DSTS l s c d Disable Remote Loop Back test mode for specified BRI Trunk DSL

DSXP x Disable Controller x and all connected cards.

ENCT loop Enable automatic background continuity tests for loop.

END Abort current test. Stops outputting. Stops current test.

ENIF L PDL2 l s c Enables the SAPI 16 interface number for BRSC on l s c for MPH on loop L.

ENIF l s c DSL BCH x
Enables the link interface for B-channel x for DSL l s c bch.
Where: x = 1–2

ENIF l s c DSL DCH x
Enables the link interface number for USID x for the DSL on l s c dch.

ENIF loop PDNI Y Enables the link interface number Y for PDNI on Loop Y (1-3).

ENL AUTO I s c u Enable automatic link recovery option of a DSL.

ENLC (BASE) I s c (FDL/NST)

Enable specified card.

If the card resides on a disabled shelf, the status is output and enable is not performed. If card has been disabled by overload, the overload status entry is cleared.

Used to enable the ISDN Basic Rate Interface Signaling Concentrator (BRSC) card. The command format is shown here. ENLC (BASE) I s c u (FDL/NST)

Where:

BASE = enable only the BRSC basecode. If not specified, both the basecode and the application will be enabled.

I = loop

s = shelf

c = card

FDL = force download the basecode

NST = No self-test

The card faceplate is turned off to indicate the card is enabled, and the IPC channel is built.

ENLC BRI I s c (FDL)

Enable the BRSC ISDN BRI application. Where:

BRI = the BRSC ISDN BRI application

I = loop

s = shelf

c = card

FDL = force download the application

The application is force downloaded if:

- FDL is entered, or
- No application currently exists on the BRSC card, or
- There is a version number mismatch between the applications in the software and on the card.

ENLC l s c	Enable and reset specified DTR/MFR card. If the card resides on a disabled shelf, the status is output and enable is not performed. If card has been disabled by overload, the overload status entry is cleared. This command causes the pack to perform a self test. If the pack self test passes, the LED will blink 3 times. If it fails, the LED will be lit solidly. A XMI message will be issued to indicate that the XMFR pack has powered up. This command can be used to enable a XMFR card. This command is also used for the S/T-Interface (SILC) and U-Interface (UILC) line cards.
ENLG x	Enable group x. Equivalent to two ENPS commands. Refer to DSPS command for the relationships of groups, PS cards and loops.
ENLL (appl) loop (FDL)	Enable MISP application, and loop. Where: appl = optional application name (BRIL) loop = loop number FDL = force download the application Entering 1 rather than FDL force downloads the application.
ENLL (appl) loop 1	Enable MISP loop. Where: appl = optional application name (BRIL) 1 = force downloads the application
ENLL loop	Enable network loop. See "Using the Enable/Disable commands" in the introduction. This command is also used for Multi-purpose ISDN Signaling Processors (MISP).
ENLL loop (v)	Enable superloop, download peripheral software version v. If version v is not specified, the software downloaded is current (c) or latest (l) version as defined in LD 97.
ENLL sl	Enable specified Superloop. OK is output if the operation is successful.

ENLN loop	Enable network card with specified loop, where loop is the even or odd numbered loop on the network card. Not applicable to superloops.
ENLR l s c u	Enable the specified DTR/MFR card. Meridian 1 software will issue a message to request XMFR to perform an echo test only when ENLR is issued to enable the XMFR card.
ENLS l s	Enable specified shelf. Where: l = loop and s = shelf. If the shelf is disabled by overload, the overload status entry is cleared.
ENLU l s c d	Enable Digital Subscriber Loop (0-7).
ENLU l s c u	Enable specified unit. If the unit resides on a disabled shelf or card, the status is output and enable is not performed. If the unit to be enabled is a 500/2500 message waiting telephone, test the unit prior to enabling.
ENNW loop	Enable network card with specified loop, where loop is the even or odd numbered loop on the network card. Not applicable to superloops.
ENPS x	Enables PS card x and all loops that were enabled at time of last DSPS command. Refer to DSPS command to find the relationships of groups, PS cards and loops.
ENRB l s c d	Enable Remote Loop Back for specified BRI Trunk DSL.
ENTS l s c d	Enable Remote Loop Back test mode for specified BRI Trunk DSL.
ENXP x (v)	Enable Controller x and associated PE cards, download software version v. Enable all PE cards connected to Controller x and the Controller itself. If version v is not specified, the software downloaded to the Controller is current (c) or latest (l) version as defined in LD 97.

ENXP XPC x (v) Enable Controller x, do not enable the associated PE cards, download software version v.

The cards connected to the Controller are not enabled by this command. If version v is not specified, the software downloaded to the Controller is current (c) or latest (l) version as defined in LD 97.

ESTU l s c d Establish D-channel link for the specified Digital Subscriber Loop (0-7).

FDIS NCAL <c DSL#> <conn_id>

Force disconnect the specified call-independent connection (as defined by its connection ID number)

Note that the command format for an Option 11C is:

STAT NCAL <c 0 0 DSL#><conn_id#>

FDIS NCAL <l s c DSL#> <conn_id>

Force disconnect the specified call-independent connection (as defined by its connection ID number)

IDC l s c Print BRSC card and loadware version.

This command queries the BRSC card ID, the basecode, and the application version number. Where: l = loop, s = shelf, and c = card.

Output example:

```
BOOTCODE  VERSION  xx . . . x
BASECODE  VERSION  xx . . . x
BRI APPL   VERSION  xx . . . x
```

IDC l s c Print MISP or XPE card ID.

The MISP card ID output format is:

```
CARDID: xxx. . . x
BASECODE VERSION: xxx. . . x
BRI LINE/TRUNK VERSION: xxx. . . x
BOOTCODE VERSION: xxx. . . x
```

The XPE card ID output format is:

=> XXXX CCCCCC-RRSSS

Where:

XXXX = card type (i.e., XDTR, XUT, etc.)

CCCCCCCC = order code

RR = release number

SSSS = is the serial number

IDC l s c d Print ID of Digital Subscriber Loop 0-7.

IDC sl

Print card ID of optical packets and main boards for Fibre superloop and associated Controller(s)

The output format for the superloop card ID including optical packets is:

```
FNET VERS => xxx
```

```
FW IS SANE
```

```
aaaaaaaaaaaaa
```

```
PRIM: pppppppp
```

```
SEC: ssssssss
```

```
XPEC VERS => xxx
```

```
FW IS SANE
```

```
aaaaaaaaaaaaa
```

```
PRIM: pppppppp
```

```
SEC: ssssssss
```

Where:

1. xxx = loadware version
2. aaaaaaaaaaaaa = contents of ID EEPROM (FNET or FPEC)
3. PRIM: pppppppp = contents of ID EEPROM primary packet (if present)
4. SEC: ssssssss = contents of ID EEPROM secondary packet (if present)

IDC l s c Print card ID for PE card. The format is:

IDC l s c — print ID of specified line card

The format of the card ID is CCCCCCCC-RRSSSS, where:

CCCCCCCC = order code

RR = release number

SSSS = serial number

For example, a Network Card (NT8D04AA) with a release of 01 and serial number of 00001 will have a card ID with:
NT8D04AA-010001

For BRI MISP cards, the output is:

```
CARDID: xxx...x
BASECODE VERSION: xxx...x
BRI LINE/TRUNK VERSION: xxx...x
BOOTCODE VERSION: xxx...x
```

IDCS x Print card ID for all cards on shelf controlled by Controller x. The card ID for all cards in shelf controlled by Controller x is output. The XPE card ID output format is:

=> XXXX CCCCCCCC-RRSSSS

Where:

```
XXXX = card type (i.e., XDTR, XUT, etc.)
CCCCCCCC = order code
RR = release number
SSSS = is the serial number
```

IDU l s c d Print set ID for Digital Subscriber Loop d (0-7)

IDU l s c u Print set ID. Print ID applies to the following set types: M2006, M2008, M2016, M2216 and M2616.

The output format of the set ID (M2008 for example) is:

```
ARIES TN:      l s c u
TN ID CODE: M2008
NT CODE: NT2K08WC
COLOR CODE: xx
RLS CODE: xx
SER NUM xxxxxxx
```

The color codes are:

- 03 is black
- 35 is chameleon ash
- 93 is dolphin grey

LBSY l s List TNs of all busy units on specified shelf.

LDIS l s List TNs of all disabled units on specified shelf.

LIDL l s List TNs of all idle units on specified shelf.

LMNT I s	List TNs of all maintenance busy units on specified shelf.
MFR I s c u	Test specified MFR card or unit. During the MFR test, faulty MFR/XMFR packs are disabled and MFRxxx error messages are output.
MFR I	Test all MFR units on loop I During the MFR test, faulty MFR/XMFR packs are disabled and MFRxxx error messages are output.
MFR <cr>	Test all MFR units During the MFR test, faulty MFR/XMFR packs are disabled and MFRxxx error messages are output.
PBXH	Message Waiting lamp maintenance.
PBXT ALL	Test all Message Waiting lamps.
PBXT I (s c u)	Tests 500/2500 Message Waiting lamp on specified loop, shelf, card or unit. This is required after failed lamp is fixed.
PCON I s c d	Upload and print configuration and LAPD parameters for specified DSL. This command requires the specified DSL to be configured for the BRI Trunk Application. See example below: PCON 6 0 0 6 .DSL: 6 0 0 6 LINL PARAM CONFIRM TIME: 0:02:10 INTERFACE: SL-1 OPER MODE: USR T200: 2 T203: 20 N200: 3 N201: 260 K: 1 PROT #: 1
PERR loop	Upload and print Layer 2 error log for specified MISP.

PERR l s c

Upload and print Layer 2 error log for specified SILC or UILC. This command requires the specified MISP or line card to be configured for the BRIT Application.

If error log is requested for a line card the error log for each DSL is printed. If error log is requested for a MISP the application global log is also printed.

Interpretation of error logs:

1st byte is DSL number or "80" for Application log.

2nd byte is number of non-zero logs.

If errors were logged the subsequent information is printed for each error type:

3rd byte is counter type code

4th byte is "HIGH" byte of count

5th byte is "LOW" byte of count

Examples follow :

PERR 6

.DSL: 6 0 0 6 ERR LOG CONFIRM TIME: 0:02:10

00 00 01 00 06 00 07 00

^ ^ ^ ^

DSL 0 DSL 1 DSL 6 DSL 7 (no errors for all DSLs)

PERR 3

.DSL: 5 0 0 2 ERR LOG CONFIRM TIME: 0:02:10

80 01 4D 00 09

Where:

1st byte - 80 - indicates Application global log

2nd byte - 01 - is number of error logs

3rd byte - 4D - is counter type code

4th byte - 00 - is "HIGH" byte count

5th byte - 09 - is "LOW" byte counts for all DSLs

PLOG l s c d Upload and print protocol log for specified BRI Trunk DSL. The protocol log keeps record of up to 32 protocol types. Only non-zero counters are uploaded and printed.

This command requires the specified MISP or line card to be configured for the BRIT Application. See example below:

```
PLOG 6 0 0 6
.DSL: 6 0 0 6 PROTOCOL CONFIRM TIME: 0:02:10
17 117 <--Counter 17 shows 117 SABME frames
received with incorrect C/R bit
18 141 <--Counter 18 shows 141 supervisory frames
received with F=1
19 84 <--Counter 19 shows 84 unsolicited DM
responses with F=1
```

PMES l s c d Upload and print Layer 3 message log for specified DSL. This command requires the specified DSL to be configured for the BRI Trunk Application.

Each time a valid Layer 3 message is received by the MISP, a counter for that particular message is incremented. The log keeps track of up to 20 message types.

Only non-zero items are uploaded and printed. Making trunk calls will create a printable log. In the following example, 2 calls were made:

```
PMES 6 0 0 6
.DSL: 6 0 0 6 MSG LOG CONFIRM TIME: 0:02:10
ALERT: 2
PROC: 2
CONNECT: 2
DISCONN: 2
REL COP: 2
```

PTAB l s c d Upload and print Layer 3 Message configuration IE table for specified BRI trunk DSL. PTAB uploads what was downloaded when the Application was enabled.

PTAB l s c d <tbl #>

Upload and print specified Layer 3 Message configuration IE table for specified BRI trunk DSL. PTAB uploads what was downloaded when the Application was enabled.
Where: <tbl #> = table number.

PTRF I s c d Upload and print traffic report for specified BRI Trunk DSL. This command requires the specified DSL to be configured for the BRI Trunk Application. See example below:

```
PTRF 6 0 0 6
.DSL: 6 0 0 6 TRAFFIC CONFIRM TIME: 0:02:10
PEAK_I_US: 0 <-- Peak link usage (over a 5 second period)
for incoming traffic since the last time the traffic data was
uploaded. An integer 0 - 100 which represents the percentage
of the link capacity used.
AVRG_I_US: 0 <-- Average link usage for incoming traffic
since the traffic was last uploaded.
PEAK_O_US: 0 <-- Peak link usage (over a 5 second period)
for outgoing traffic since the last time the traffic data was
uploaded. An integer 0 - 100 which represents the percentage
of the link capacity used.
AVRG_O_US: 0 <-- Average link usage for outgoing traffic
since the traffic was last uploaded.
TIME: 0 <-- time since last traffic upload query CONNECTED
CALL: 2 <-- number of successfully connected trunk calls
```

RLBT I s c d Perform Remote Loop Back Test on specified BRI Trunk DSL.

RLSU I s c d Release D-channel link for specified Digital Subscriber Loop (0-7).

RMIF L PDL2 I s c Disables and removes the SAPI 16 interface number for BRSC on I s c for MPH on loop L.

RMIF L PDL2 L1 Disables and removes the SAPI 16 interface number for BRIL on Loop L1 for MPH on loop L.

RMIF I s c DSL BCH x
Disables and removes the link interface for B-channel x for DSL I s c bch; where: x = 1-2

RMIF loop PDNI Y Disables and removes the link interface number Y for PDNI on Loop Y (1-3)

SDLC I s c Get status of specified ISDL card.

SDTR l s c u	List status of specified DTR/MFR card or unit.
SDTR <cr>	List status of all disabled DTR/MFR units
STAT	Get status of all configured loops in system
STAT (appl) loop	Get status of MISP loop and application. If appl = BRIL, the status of the BRI Line application is output. If appl = BRIT, the status of the BRI Trunk application is output. Typical response is: <pre>loop = MISP loopmm DSBL nn BUSY MISP lll : ENBL ACTIVATED timestamp BRIL : ENBL BRIT : ENBL</pre> If the card has been manually disabled, the response is: <pre>loop = MISP loopDISABLED RESPONDING MAN DSBL</pre> If the card has been disabled by the system, the response is: <pre>loop = MISP loopDISABLED RESPONDING SYS DSBL - aaa...a</pre> Where aaa...a is the reason as follows: a BOOTLOADING = basecode is being downloaded to the MISP b FATAL ERROR = MISP has a serious problem c OVERLOAD = MISP overload (card inoperable) d RESET THRESHOLD = too many resets (card inoperable) e SELF TESTING = card is performing self-test f SELFTEST FAILED = self-test failed g SELFTEST PASSED = successfully completed self-test h SHARED RAM TEST FAILED = MISP memory problem (card inoperable) i STUCK INTERRUPT = MISP hardware failure (replace card)

With the STAT BRIL or STAT BRIT option, the response is one of the following:

1. APPLICATION ENBL
2. APPLICATION NOT CONFIGURED
3. APPLICATION NOT RESPONDING
4. APPLICATION MAN DSBL (manually disabled)
5. APPLICATION SYS DSBL - aaa..a (system disabled)

Where: aaa..a is the reason as follows:

- a** CLOSED = application is closed by basecode on the card
- b** CLOSED ERR = error in closing the application
- c** CORRUPTED = application is corrupted on the card
- d** DOWNLOADING = application is being downloaded
- e** ENABLED = application is in active state
- f** INACTIVE = application is in inactive state
- g** MNT BUSY = application is in maintenance busy state
- h** WAIT DSBL = application is in process of being disabled
- i** WAIT ENABLE = application is in process of being enabled
- j** WAIT ERASE = application is being erased from the card
- k** WAIT REMOVE = application is being removed from the card

STAT (loop)

Give status of one or all loops. Response is one of the following:

1. x BUSY, y DSBL = loop enabled with x channels busy and y channels disabled.
2. UNEQ = loop unequipped.
3. CTYF: 11 12 = loop specified in STAT command is unable to receive data from loops 11, 12, etc. (i.e., continuity test failed in most recent LD 45 loop test). Probable fault in network card.
4. DSBL: NOT RESPONDING = loop disabled. Network card not responding. Card missing, disabled by switch or faulty.

5. **DSBL: RESPONDING** = loop disabled but the network card responds. loop may have been disabled due to:
 - a manual request (DISL)
 - b associated Peripheral Signaling card being disabled
 - c overload condition on associated loop

Note 1: Overload conditions are indicated by OVD messages. An attempt to enable a loop which was disabled due to overload may result in a recurrence of the overload condition: the system's service may be impaired for about 2 minutes.

Note 2: For MISP loops see STAT (appl) loop command.

STAT I s Get idle, busy or disabled status of units on specified shelf. Displays number of units idle, busy, disabled and maintenance busy for the specified shelf.

STAT I s c Get status of any specified PE/IPE card. (e.g., digital line, analog, DTR, etc.)

When getting the status of a card relating to a trunk error (STAT), the term RVSD may appear with the trunk information. RVSD indicates that the software has detected a reversed wired trunk for that unit.

When getting the status of a card where ACD sets are defined, the printout will include MSB LOG OUT, MSB LOG IN, LOG IN, OR LOG OUT, according to the ACD set state.

The output format for either a *S/T-Interface line card (SILC)* or an *U-Interface line card (UILC)* is:

For BRI trunks:

11 = UNIT II = DSL/UNIT number on the card =

```
swstate type L2_state L1_state dch_state clk
(mode)
```

For BRI lines:

11 = UNIT II = DSL/UNIT number on the card =

```
swstate type L2_state L1_state
```

If you are analyzing a *SILC* or an *UILC* card, [Table 11](#) on [page 492](#) lists and defines output fields and field responses. An output example can be found [page 491](#).

The output format for an *ISDN BRI card* is:

```
loop = UNIT sw_state DSL misp_state LC_state
```

With ISDN BRI BRSC cards, the basecode and application status are output.

APPLICATION TIME	MAIN STATE	SUB STATE/ACTIVATION
BASECODE BRI	ENABLED ENABLED	xx/xx/xx x:xx xx/xx/xx x:xx
IDLE 0 MSBY 0	BUSY 0	DISABLED 8
TOTAL DSLS CONFIGURED 8		

If you are analyzing an *ISDN BRI card*, see “STAT l s c d” command for a list of possible states.

Output Example:

```
00 = UNIT 00 = IDLE LINE   ESTA UP
01 = UNIT 01 = IDLE TRNK  ESTA UP           ESTA SREF (TE)
02 = UNIT 02 = IDLE LINE   ESTA DOWN
03 = UNIT 03 = UNEQ
04 = UNIT 04 = UNEQ
05 = UNIT 05 = UNEQ
06 = UNIT 06 = DSBL TRNK DSBL UNEQ RLS      (NT)
07 = UNIT 07 = DSBL TRNK DSBL UNEQ RLS      (TE)
```

Table 11: STAT I s c Field and Response Definitions

Field	Field Definition	Response	Response Definition
swstate	state of DSL/UNIT in software	IDLE BUSY UNEQ MBSY	no active call active with a call unequipped maintenance busy
type	DSL type	LINE TRNK	BRI line BRI trunk
L2_state	Layer 2 state of DSL/UNIT in MISP loadware	UNEQ IDLE BUSY MBSY DSBL ESTA RLSU TEST RLBT APDB MPDB MPNR UTSM	unequipped no active call active with a call maintenance busy disabled D-channel link is established D-channel link is released test mode remote loop back application disabled associated MISP disabled associated MISP not responding unable to send message to MISP
L1_state	Layer 1 state of line card	UNEQ DOWN LCNR UP UNDN XPDB UTSM	unequipped Layer 1 is down line card not responding Layer 1 is up undefined DSL state Associated XPEC is disabled unable to send message to MISP
dch_state	State of D-channel link in software	ESTA RLSU TEST-IDLE TEST-RLBT	D-channel link is established D-channel link is released test mode idle test mode remote loop back
clk	Clock mode	DSBL PREF SREF	disabled primary reference secondary reference
mode	Layer 1 mode of DSL	NT TE	Network Termination Terminal Equipment

STAT I s c d Get status of specified Digital Subscriber Loop (0-7). bri-18

When getting the status of an unit where ACD sets are defined, the printout will *not* include MSB LOG OUT, MSB LOG IN, LOG IN, OR LOG OUT, according to the ACD set state.

The output format is:

```
DSL sw_state misp_state lc_state B1 status
B2 status
```

[Table 12](#) defines output fields. [Table 13](#) on [page 494](#) lists and defines possible responses.

Table 12
STAT I s c d Field Definitions

Field	Definition
sw_state	DSL software state
misp_state	DSL state on the MISP card
lc_state	DSL state on the BRI line card
swstate	State of DSL/UNIT in software
L2_state	Layer 2 state of DSL/UNIT in MISP loadware
L1_state	Layer 1 state of line card
dch_state*	State of D-channel link in software
clk*	Clock mode
b1_state	State of first B-channel
b2_state	State of second B-channel
* these fields are output only for BRI trunks	

Table 13
STAT I s c d Response Definitions

Response	Definition
APDB	MISP call application is disabled
BUSY	Call is active
DOWN	Link layer is not established
DSBL	DSL is disabled
ESTA	Link layer is established
IDLE	No active calls
LCNR	Line card is not responding
MBSY	DSL is in maintenance busy mode
MPDB	MISP is disabled
MPNR	MISP not responding or message is lost
NTAN	DSL is not assigned to a MISP
RLS	Link layer is not established
UNDN	DSL is in an undefined state
UNEQ	Unequipped
UP	Link layer is established
UTSM	CPU is unable to send message to MISP or line card
XTDB	Superloop is disabled
XPDB	Controller is disabled

STAT I s c u Get status of specified unit. basic-1

[Table 14](#) lists and defines possible responses to STAT I s c u.
The response may be normal, abnormal, or caused by an invalid equipment choice.

Table 14
STAT I s c u Responses

Type	Response	Definition
Normal	IDLE	Idle
	MBSY	Maintenance busy
	DSBL	Disabled
	DSBL	Virtual terminal on Meridian 1 / Meridian SL-1 disabled by Server
	BUSY	In use by call processing
	BUSY BARRED	Barring is applied to trunk with BARA Class of Service
	UNEQ	Terminal not defined in software
	L500	Line is 500/2500 type
	MBCS	Maintenance set
	BCS	Normal SL-1 telephone
	TRK	Trunk
	ATTN	Attendant console
	DTR	Digitone Receiver
	PWR	Console power unit
Abnormal	CARD x DSBL (OVD)	Card x disabled due to overload
	DND xxx xxx	Do Not Disturb feature is active
	SHELF DSBL (OVD)	Shelf disabled due to overload
	SIG FAULT	Outgoing signal circuitry fault detected on PS card under examination.
	WARNING: CRPTR	TN's data is corrupted. Check BUG messages relating to the
	NOT IN RANGE	TN.
Responses caused by invalid equipment choice:		
	EXT DSBL	Extender disabled
	LOOP NOT TERM	Loop is not a terminal loop
	LOOP UNEQ	Loop is unequipped
	SHELF UNEQ	Shelf is unequipped
	SHELF UNEQ W/PBX	No 500 cards on shelf
	CARDS	
	CARD UNEQ	Card is unequipped
	CARD NOT PBX	Card is not a PBX card
	UNIT UNEQ FOR MW	Unequipped for Message Waiting
	PER UNEQ	PS card is unequipped
	UNIT UNEQ	Unit is unequipped

STAT NCAL <c DSL#>

qsig gf-22

List all current call-independent connections on a given BRIT DSL. (Option 11)

The response format is as follows:

NCALL CONN ID: a number in the range of 1-9999 that identifies the call independent connection on a given DSL
CREF: call reference number in HEX identifying independent connection
STATE: current state of all call-independent connections (IDLE, CONN_REQ, CONN_EST)
TIME: year month day hour:minute:second (the time when call independent connection request is made)
APPL: applications using the call-independent connection (e.g., NACD, NMS,...)
ORIG: originator
DEST: destination

Note that the command format for an Option 11C is:

STAT NCAL <c 0 0 DSL#>

To enter this command, QsigGF package 305 is required.

STAT NCAL <l s c DSL#>

qsig gf-22

List all current call-independent connections on a given BRIT DSL.

The response format is as follows:

NCALL CONN ID: a number in the range of 1-9999 that identifies the call independent connection on a given DSL
CREF: call reference number in HEX identifying independent connection
STATE: current state of all call-independent connections (IDLE, CONN_REQ, CONN_EST)
TIME: year month day hour:minute:second (the time when call independent connection request is made)
APPL: applications using the call-independent connection (e.g., NACD, NMS,...)
ORIG: originator
DEST: destination

To enter this command, QsigGF package 305 is required.

STAT NCAL <l s c DSL#> <conn_ID>	List information pertaining to a specific call-independent connection (as defined by its connection ID) The response format is as follows: NCALL CONN ID: a number in the range of 1-9999 that identifies the call independent connection on a given DSL CREF: call reference number in HEX identifying independent connection STATE: current state of all call-independent connections (IDLE, CONN_REQ, CONN_EST) TIME: year month day hour:minute:second (the time when call independent connection request is made) APPL: applications using the call-independent connection (e.g., NACD, NMS,...) ORIG: originator DEST: destination To enter this command, QsigGF package 305 is required.	qsig gf-22
STAT NWK loop	Check status of network card with specified loop, where loop is the even or odd numbered loop on the network card.	basic-1
STAT PER x	Get status of PS card x. If the PS card is disabled, the response is changed from DSBL to either: 1. DSBL: NOT RESPONDING = PS card x is either missing, faulty or disabled via the faceplate switch. • If there is a fault in the extender pair for the network shelf, the status of the PS card will also be: DSBL: NOT RESPONDING. 2. DSBL: RESPONDING = The PS card is disabled and responding to the CPU. The PS may have been disabled by manual request (DSPS) or the associated extender pair may have been manually disabled. If neither of these conditions exists, the card may have been disabled because of an overload condition on the associated shelf. Check for OVD messages appearing in previous TTY output.	basic-1

An attempt to enable a PS card which was disabled because of an overload may result in a recurrence of the overload condition: the system's service may be impaired for approximately 2 minutes.

STAT sl	Get current status of superloop and separate carriers on that superloop, based on data previously sent by the Carrier Interface F/W (LCIM).	rem_ipe-21
	For each carrier, the following fields will be displayed: S/W State, SPARE Status, NND Status, TSA (Time Slot Availability) and CALS. TTSA = Number of Traffic Timeslots currently available for voice and data calls out of a possible: 21 for T-1 and 27 for T-E. SPARE Status indicates whether the carrier is spared and which carrier it is spared in. NND Status indicates whether new data calls are disallowed on the timeslots being transmitted by the carrier.	
STIF L PDL2 I s c	Displays link status for SAPI 16 interface of BRSC I s c for MPH on loop L.	bri-19
STIF L PDL2 L1	Displays the link status for SAPI 16 interface of BRIL L1 for MPH on loop L.	bri-19
STIF I PDNI y	Displays the link status for interface Y for PDNI. Where: Loop Y = 1-3	bri-19
STIF I s c DSL DCH x	Displays the link status for B-channel X for the DSL I s c D. Where: BCH stands for B-channel and X = 1-2.	bri-19
SUPL (loop)	Print data for all or specified superloop(s).	xpe-15
TRK I s c u	Seize specified trunk for outpulsing. Command is valid at a maintenance telephone only. The specified trunk is connected to the maintenance telephone and a test call may be performed on the trunk. When the test call is completed, access sequence SPRE 91 must be redialed to use the maintenance telephone to input more commands.	basic-1

XNTT loop	Do self-test of Network card for specified superloop. The Network card must be disabled before the self-test.	xpe-15
XPCT x	Do self-test on Controller x. The NT8D01 Controller must be disabled before the self-test.	xpe-15
XPEC (x)	Print data for all or specified Controller(s).	xpe-15

LD 34—Tone and Digit Switch and Digitone Receiver Diagnostic

This program tests circuit cards used in generating and detecting tones. If loaded automatically in background or as part of the daily routines, it tests the hardware and performs fault detection and isolation. If invoked manually, commands can be issued to conduct the entire test or only certain parts of the test and to change card status.

The program tests the following circuit cards:

- Tone and Digit Switch (TDS)
- Flexible Tone and Digit Switch
- Digitone Receiver (DTR)

TDS circuit card outputters and channels are checked for timing errors, memory faults and Digitone frequency accuracy. Digitone receivers are checked for response to all Digitone frequencies. Tones and outputters are tested from a maintenance set.

Basic commands

CDSP	Clear the maintenance display on active CPU to 00 or blank
CMAJ	Clear major alarm and reset power fail transfer
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c
DISR l s c (u)	Disable specified DTR/MFR card or unit. Applies to DTR or XTD packs.
DISX l	Disable Conf/TDS/MFS card on loop l and l + 1
DTR l s c (u)	Test specified Digitone receiver card or unit. Applies to DTR and XTD packs.
END	Stop execution of current command
ENLL loop	Enable tone and digit loop
ENLR l s c (u)	Enable the DTR/MFR card or unit. Applies to DTR and XTD packs.
ENLX l	Enable Conf/TDS/MFS card on loop l and l + 1
MFR	Test all Automatic Number Identification Feature Group D Multifrequency receiver units
MFR c (u)	Test Automatic Number Identification Feature Group D Multifrequency card or unit
SDTR l s c (u)	Get status of specified DTR/MFR or XTD card or unit.
STAT	List TNs of all disabled DTRs and MFRs
STAT loop	Get status TDS loop
TDS loop	Test outputers and channels on specified loop

Maintenance telephone commands

The following commands are used from a Maintenance telephone to test and hear the various tones. Both the command and the dial pad equivalents (in parantheses) are shown.

ANNx#loop## (266x#loop##)

Provides signals coming through source number x of KAPSCH Digital Announcer or Music Interface. Where loop = Tone and Digit Switch loop number)

BSY#loop## (279#loop##)

Provide busy tone from tone and digit loop.

C## (2##)

Remove any active tone.

CMP#loop## (267#loop##)

Provide Camp-On tone from loop.

CUST#xx## (2878#xx##)

Test outpulsing for customer XX.

CWG#loop## (294#loop##)

Give call waiting tone from loop.

DIA#loop## (342#loop##)

Provide dial tone from tone and digit loop.

DRNG#loop## (3764#loop##)

Provide distinctive ringing from loop.

ITN#loop## (486#loop##)

Provide intrusion tone from loop.

JDRG#loop## (5374#loop##)

Provide distinctive ringing from loop.

JIDT#loop## (5438#loop##)

Provide interrupted dial tone from loop.

OPS#loop#x## (677#loop#x##)

Test outpulsing from Meridian 1/Meridian SL-1 to idle trunk.

ORD#loop## (673#loop##)

Provide override tone from loop.

OVF#loop## (683#loop##)

Provide overflow tone from loop.

PCRT#loop## (7278#loop##)

Test the Paid Call Restriction (PCR) tone after the TABL command.

RBK#loop## (725#loop##)

Provide ringback tone from loop.

RNG#loop## (764#loop##)

Provide ring tone from loop.

SDL#loop## (735#loop##)

Give special dial tone from loop.

TABL#xx## (8225#xx##)

Select table number xx. If this command is not issued before any tone request command, then table 0 is assumed (Generic X11 with supplementary features).

TLP#loop## (857#loop##)

Provide tone to last party from the tone and digit loop.

TST#loop## (878#loop##)

Provide test tone from loop.

XCTT#loop#t#c## (9288#loop#t#c##)

Test tone and cadence number on Conference/TDS/MFS card.

Alphabetical list of commands

Command	Description	Pack/Rel
ANNx#loop## (266x#loop##)	Provides signals coming through source number x of KAPSCH Digital Announcer or Music Interface. Where: loop = Tone and Digit Switch loop number.	basic-6
BSY#L## (279#L##)	Provide busy tone from tone and digit loop L.	basic-1
C## (2##)	Remove any active tone.	basic-1
CDSP	Clear the maintenance display on active CPU to 00 or blank.	basic-1
CMAJ	Clear major alarm, reset power fail transfer and clear power fault alarm.	basic-1
CMIN ALL	Clear minor alarm indication on all attendant consoles.	basic-1
CMIN c	Clear minor alarm indication on attendant consoles for customer c.	basic-1
CMP#loop## (267#loop##)	Provide Camp-On tone from loop.	basic-1
CUST#xx## (2878#xx##)	Test outpulsing for customer XX.	basic-1
CWG#loop## (294#loop##)	Give call waiting tone from loop.	basic-1
DIA#L## (342#L##)	Provide dial tone from tone and digit loop L.	basic-1
DISD I s c	Disable the specified Meridian 1/Meridian SL-1 Tone Detector card. Disables both units and lights the LED.	basic-1
DISD I s c u	Disable specified Dial Tone Detector. If both units on the card are disabled, the LED lights.	basic-1

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DISL loop	Disable tone and digit loop. For Conference/TDS/MFS cards see note with ENLL command.	basic-1
DISR l s c (u)	Disable specified DTR/MFR or XTD card or unit.	xtd-8
DISX l	Disable Conf/TDS/MFS card on loop l and l + 1. Disables the entire combined Conference, Tone and Digit Switch, and MF Sender (NT8D17) card. Both the even numbered TDS/MFS loop and adjacent conference loop are disabled. loop = 0, 2, 4, . . . 158 The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card. This command can be used in LD 34, LD 38 and LD 46.	xct-15
DRNG#loop## (3764#loop##)	Provide distinctive ringing from loop.	basic-1
DTD l s c u	Test specified Dial Tone Detector unit. Applies to DTD and XTD packs. The Dial Tone Detector Test (DTDT) parameters must be configured in the configuration record (LD 17). Faulty DTD packs are disabled. Only 50% of all Dial Tone Detectors in the system may be disabled.	xtd-8
DTR l s c (u)	Test specified unit on Digitone receiver card or unit . This test may be performed while the card is enabled or disabled. If a disabled card passes the test, it is enabled automatically. This command also applies to the XTD.	xtd-8
END	Stop execution of current command.	basic-1
ENLD l s c (u)	Enable Tone Detector on specified card or unit.	basic-1

ENLL I	Enable tone and digit switch loop I. For Conference/TDS/MFS cards the DISX and ENLX commands must be used whenever the faceplate switch of the card has been toggled. ENLL will software enable the card but the card will not be properly reset.	basic-1
ENLR I s c (u)	Enable the DTR/MFR or XTD card or specified unit.	xtd-8
ENLX I	Enable Conf/TDS/MFS card on loop I and I + 1. This command can be used in LD 34, LD 38 and LD 46. Enables the entire combined Conference, Tone and Digit Switch, and MF Sender (NT8D17) card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled. (loop = 0, 2, 4, . . . 158) The Conf/TDS card is not enabled automatically when it is inserted. Both loops must have been previously disabled. This command initiates card tests and the download of software. The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card. Enabling more than 16 conference loops may cause the system to lock-up.	xct-15
ITN#loop## (486#loop##)	Provide intrusion tone from loop.	basic-1
JDRG#loop## (5374#loop##)	Provide distinctive ringing from loop.	basic-8
JIDT#loop## (5438#loop##)	Provide interrupted dial tone from loop.	basic-8
MFR	Test all Automatic Number Identification (ANI) Multifrequency receiver units.	fgd-17
MFR loop	Test all Automatic Number Identification (ANI) Multifrequency receivers on this loop.	fgd-17

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MFR I s c (u)	Test Automatic Number Identification (ANI) Multifrequency receiver card or unit.	fgd-17
OPS#L#xx## (677 #L #xx##)	Test outpulsing from Meridian 1/Meridian SL-1 to idle trunk. Outpulses from tone and digit loop I using the 10 or 20 pps outpulser to any idle trunk. This command connects the Meridian 1/Meridian SL-1 maintenance telephone to the trunk, permitting a test call on the trunk to be made using the outpulsers selected. Where : xx = 10 or 20 representing the trunk class of service (LD 14 CLS = P10 or P20). When the test call is completed, LD 34 must be reloaded by dialing SPRE + 91 before entering another command.	basic-1
ORD#loop## (673#loop##)	Provide override tone from loop.	basic-1
OVF#L## (683#L##)	Provide overflow tone from loop L.	basic-1
PCRT#loop## (7278#loop##)	Test the Paid Call Restriction (PCR) tone after the TABL command.	pcr-7
RBK#L## (725#L##)	Provide ringback tone from loop L.	basic-1
RNG#L## (764#L##)	Provide ring tone from loop L.	basic-1
SDL#loop## (735#loop##)	Give special dial tone from loop.	basic-1
SDTR	List the TNs of all disabled DTR/MFR or XTD units	xtd-8
SDTR	List all disabled DTR units	basic-1

SDTR l s c (u)	Get status of specified DTR/MFR or XTD card or unit. If no parameters are entered, a list of all DTR/MFR TNs is output. If l s c is input, the status of the DTR/MFR units on the specified card are output. If l s c u is input, the status of the specified unit is output. Applies to DTR and XTD packs.	basic-1
STAD	List all disabled Tone Detector units.	basic-1
STAD l s c (u)	Get status of Tone Detector card or unit. The status is either idle, busy, maintenance busy or not equipped.	basic-1
STAT	List TNs of all disabled Digitone Receivers. NONE is output if there are no disabled Digitone Receivers.	basic-1
STAT loop	Get status TDS loop. The response may include OPS DSBL, indicating that the outpulsing function of the TDS card has been disabled.	basic-1
TABL#xx## (8225#xx##)	Select table number xx. If this command is not issued before any tone request command, then table 0 is assumed (Generic X11 with supplementary features).	basic-1
TDET l s c (u)	Perform self-test and tone detection on specified card or unit. Performs the self-test and basic tone detection functions of the Meridian 1/Meridian SL-1 Tone Detector card or unit. This test may be performed while the card is enabled or disabled. If a disabled card passes the test, it is enabled automatically.	basic-1
TDS loop	Test outpulsers and channels on specified loop. Tests the outpulsers and channels of the tone and digit switch at loop. Outpulsers and tones are tested with a maintenance telephone (see commands from maintenance telephone).	basic-1
TLP#loop## (857#loop##)	Provide tone to last party from the tone and digit loop.	basic-4
TST#loop## (878#loop##)	Provide test tone from loop.	basic-1

LD 34

XCTT# L#t#c## (9288# L#t#c##)

xct-15

Test tone and cadence number on Conference/TDS/MFS card.

Where:

L = loop number of Conference/TDS/MFS (NT8D17) card

t = tone number

c = cadence number

Refer to Flexible Tone and Digit Switch cards (553-2711-180)
for the Conference/TDS tone and cadence numbers.

LD 36—Trunk Diagnostic

This program allows trunks to be tested either from on-site or from a remote test center.

When testing from on- site, individual trunks can be seized and a test call can be performed on the trunk in the normal manner.

When testing from a remote test center, a speech path must be set up to monitor the testing. This is accomplished by having the Option 11C Compact call a directory number (DN) at the test center. This allows for dial tone, outpulsing and test tones to be monitored as tests are performed on other trunks by inputting commands at the TTY.

When a trunk is seized, the system prompts DN? for a DN. When the DN is input, the system calls that number automatically. When the call is answered a pure tone indicates the validity of the speech path. New trunks can be tested in the same manner with the maintenance telephone.

When to use LD 36

- clear minor alarms and the maintenance display
- query threshold overflows for specific customers and routes
- reset thresholds for specific trunks
- query number of days since an incoming call was received for a specific customer and route or trunk
- query the trunk with the most number of idle days for a specific customer and route

- query trunks for which no disconnect supervision was received
- test Automatic Number Identification (ANI) trunks.

Note: When defined as a midnight routine, this program searches for trunks not used during the day and updates the total number of days the trunks have been idle.

- enable, disable and request the status of Trunk circuit cards. (Disabled DID trunks are placed in the answer state)

Note: LD 36 can only be used for analog trunks, LD 60 must be used for diagnostics on digital trunks.

Trunk Error Thresholds

Resident programs monitor all calls and note apparent errors. The errors are accumulated and, if they occur consistently (exceed a threshold) on any trunk, a diagnostic message which identifies the trunk is output to the TTY or printer. The trunk should be suspected of trouble and a manual test should be performed on the trunk.

A record is kept in memory for each threshold violation error message. At any time, all trunks which have been identified by such a message may be listed by entering the command LOVF for any trunk route. Once an identifying message has been printed, it will not be repeated for that trunk until the RSET command is entered for that trunk or an initialization has occurred.

Potentially, a trunk may fail by not detecting incoming calls. The Meridian 1/Meridian SL-1 threshold mechanism cannot be used to detect such failures so the Meridian 1/Meridian SL-1 maintains for each trunk a count of the number of days since an incoming call was received on each trunk.

Thus, customer reports that indicate incoming calls are not being processed can initiate a check for the trunk which has been without an incoming call for the longest interval via the LMAX command. This trunk should be tested first.

It is possible to determine for each trunk the number of days since an incoming call was processed via the LDIC command. Subsequent trunk tests should be performed on those trunks showing the highest counts until the trouble is located.

Basic commands (LD 36)

CALL	Set up monitor link with test center
CALL c u	Set monitor link with test center on this trunk
CDSP	Clear the maintenance display on active CPU to 00 or blank
CMIN	Clear the minor lamp on a system basis
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c (not applicable for Release 22)
DISC c	Disable specified card for replacement
DISU c u	Disable specified unit
END	Terminate test in progress
ENLC c	Enable specified card
ENLU c u	Enable specified unit
LDIC c r	List number of days since last incoming call for specified customer and route
LDIC c u	List number of days since last incoming call on specified trunk
LMAX c r	List trunk with maximum idle days for specified customer and route
LNDS c r	List trunks with no disconnect supervision for specified customer and route
LOVF c r	List threshold overflows for specified customer and route
RAN c r	Test recorded announcement device for specified customer and route
RLS	Release trunk being tested
RSET c u	Reset thresholds for specified trunk
STAT c	Check card's software status
TRK c u	Seize trunk for testing
TPPM c u	Test the specified PPM trunk

Note: If a trunk unit is controlled by APNSS, the STAT command will display the status of the D-channel.

Alphabetical list of commands

Command	Description
CALL	Set up monitor link with test center. Same as the CALL c command except any PTRS trunk in the system can be selected. The CALL command must be terminated using the * command.
CALL c u	This command sets up a monitor link (call) between the system and the test center on the trunk specified. The system prompts "DN?" for the directory number. When the PTRS directory number is entered, the system calls up that number automatically. When the call is answered, a pure tone indicates the validity of the link. This sequence can take up to 14 seconds on a trunk without answer supervision. The END command disconnects the call. The CALL c u command is not allowed when the diagnostic program is being run from a maintenance telephone. During the CALL command, On-Hook and Off-Hook signals from the maintenance telephone may initiate BUG105. When the monitor is enabled, a failed trunk is displayed as BUSY. The enable/disable command does not enable or disable the failed trunk unit (it stays in the BUSY state).
CDSP	Clear the maintenance display on active CPU to 00 or blank.
CMIN	Clear the minor lamp on a system basis.
CMIN ALL	Clear minor alarm indication on all attendant consoles.
CMIN c	Clear minor alarm indication on attendant consoles for customer c. (not applicable for Release 22)
DISC c	Disable specified card for replacement.
DISU c u	Disable specified unit.
END	Terminate test in progress

ENLC c	Enable specified card. If the card resides on a disabled shelf, its status is output and the enable is not performed. If the card has been disabled by an overload, the overload status is cleared.
ENLU c u	Enable specified unit. If unit resides on a disabled shelf or card, then status is output and enable is not performed.
LDIC c r	List number of days since last incoming call for specified customer (c) and route (r).
LDIC c u	List number of days since last incoming call on specified trunk.
LMAX c r	List trunk with maximum idle days for specified customer and route
LNDS c r	List trunks with no disconnect supervision for specified customer and route. (trunks for which no disconnect supervision was received, i.e., terminating party not going On-Hook after a call)
LOVF c r	List threshold overflows for specified customer and route. The overflows are set when the resident trunk monitor outputs a diagnostic
RAN c r	Test recorded announcement device for specified customer and route.
RSET c u	Reset thresholds for specified trunk.
STAT c	Check card's software status.
TPPM c u	Test the specified PPM trunk. This command is not applicable when the Meridian 1/Meridian SL-1 is connected to 1 TR 6 international ISDN PRA.

TRK c u

Seize trunk for testing.

Seizes the specified trunk for outpulsing and testing. If the command is issued from a maintenance telephone, dial tone is heard followed by outpulsing when the directory number is entered.

If a trunk is to be seized for outpulsing and testing from a remote test center (not a maintenance telephone), a monitor link must first be set up using the CALL c u command. This must not be over the trunk to be tested.

With the monitor link set up, the TRK c u command is input to select the trunk to be tested. The system then prompts with "DN?" and the directory number is input via the TTY. Normal speech path connections are made between the monitor link and the trunk being tested.

Disconnect by entering END, by going On-Hook if an SL-1 telephone is used or by entering *. END also disconnects the monitor link.

This command cannot be used to seize an ISL trunk.

LD 37—Input/Output Diagnostic

This program is used to diagnose faults with disk units, tape units, Teletypewriter (TTY) or Serial Data Interface (SDI) cards. It provides enable, disable, status and test functions on these devices. Problems are indicated in IOD messages.

Only some of the commands in this Overlay are supported. Refer to LD 137 for core commands.

Refer to LD 48 for I/O ports used with the following applications.

- Command and Status Links (CSL)
- Meridian Link
- Automatic Call Distribution (ACD)
- Integrated System Messaging Link
- Enhanced Serial Data Interface (ESDI) ports

Intelligent links (APL, HSL, LSL, and CMAC)

A warning message is generated each time an intelligent link is accessed (enable, disable, test). The message is generated for the following types of links:

APL
ACD-D (HSL/LSL)
CMAC (CMC)

The message allows the access to be aborted prior to performing the enable, test, etc. The warning appears in the following format:

DIS TTY N (link type) LINK (status) (y/n)

A response of y disables the hardware of the TTY regardless of the software status of the link. The status field provides the software status of the link.

Valid status entries are:

BAD = software status is invalid

DOWN = link is down

MAINT = link is up and in maintenance mode

FULL = link is full

EMPTY = link is empty

NOT EMPTY= link still contains data

Basic commands

CDSP	Clear the maintenance display on active CPU to 00 or blank
CMIN	Clear the minor lamp on a system basis
CMIN ALL	Clear minor alarm indication on all attendant consoles
DIS MSG	Disable incoming message monitoring for the primary PMSI port.
DIS MSGO	Disable outgoing message monitoring for the primary PMSI port.
DIS PRT x	Disable printer x
DIS TTY x	Disable TTY x.
END	Clear all test activity
ENL MSGI	Enable incoming message monitoring for the primary PMSI port.
ENL MSGO	Enable outgoing message monitoring for the primary PMSI port.
ENL PRT x	Enable printer x
ENL TTY x	Enable TTY x
PRT x	Test printer x
SET MON 0	Set the monitoring display to be in alphanumeric format. This applies to the primary PMSI port.
SET MON 1	Set the monitoring display to be in hexadecimal format. This applies to the primary PMSI port.
STAT	Provide status of all input/output devices in system
STAT MON	Get the monitoring status for the primary PMSI port. This command displays the status of the message monitoring for the primary port. For example, if MSGI, MSGO, and SET MON 0 are enabled, the display would be as follows. MSGI:ON MSGO: ON ALPH
STAT PRT	Provide status of all printers in system
STAT PRT x	Provide status of printer x
STAT TTY	Provide status of all TTY devices in system This command enables you to get the status of the primary PMSI I/O port, and the Single Terminal Access (STA) administration terminal.
STAT TTY x	Provide status of TTY x This command also provides the status of the primary PMSI port.
STAT XSM	Provide status of the system monitor
TTY x	Test TTY x

T1 Multipurpose Serial Digital Interface (TMDI) commands

The TMDI provides 1 port for ISDN Primary Rate D-channel (DCH) and 1 port for 1.5Mb/s Digital Trunk Interface (DTI).

The TMDI commands are listed below, **x** is the TMDI card number (defined by prompt DLOP in LD 17). These commands are provided in Link Diagnostic (LD 48) and D-channel Diagnostic (LD 96) and LD 42.

DIS TMDI x (ALL)	Disable TMDI card x (card)
ENL TMDI x (ALL, FDL)	Enable TMDI card x (card, Forced Download)
RST TMDI x	Reset TMDI card x
SLFT TMDI x	Invoke self-test for TMDI card x
STAT TMDI (x) (FULL)	Get status of TMDI card (x) (additional information)

Note: See “Alphabetical List of commands” in LD 48 for a complete description of these commands.

Alphabetical list of commands

Command	Description
CDSP	Clear the maintenance display on active CPU to 00 or blank.
CMIN	Clear the minor lamp on a system basis.
CMIN ALL	Clear minor alarm indication on all attendant consoles.
CMIN c	Clear minor alarm indication on attendant consoles for customer c. (not applicable for Release 22)
DIS MSG	Disable incoming message monitoring for the primary PMSI port.
DIS MSGO	Disable outgoing message monitoring for the primary PMSI port.
DIS MSI x	Disable Mass Storage Interface card x.
DIS PRT x	Disable printer x.
DIS TAPE x	Disable tape unit x.
DIS TTY x	Disable TTY x.
END	Clear all test activity.
ENL MSGI	Enable incoming message monitoring for the primary PMSI port.
ENL MSGO	Enable outgoing message monitoring for the primary PMSI port.
ENL MSI x	Enable Mass Storage Interface card x.
ENL PRT x	Enable printer x.
ENL TAPE x	Enable tape unit x.
ENL TTY x	Enable TTY x.

MSI x	Test Mass Storage unit x. This command runs the MSI DATA, MSI RW x and MSI SELF x tests.
MSI DATA	Test data validity in primary and backup device.
MSI RW x	Test READ/WRITE ability of Mass Storage unit x.
MSI SELF x	Perform self-test on MSI card and report result.
PRT x	Test printer x. Same as TTY test except that no keyboard input is expected and END command is not required. Where: * denotes that the printer is not yet available
SET MON 0	Set the monitoring display to be in alphanumeric format. This applies to the primary PMSI port.
SET MON 1	Set the monitoring display to be in hexadecimal format. This applies to the primary PMSI port.
STAT	Provide status of all input/output devices in system.
STAT LINK	Provide status of all CDR links.
STAT LINK x	Provide status of CDR data link x.
STAT MON	Get the monitoring status for the primary PMSI port. This command displays the status of the message monitoring for the primary port. For example, if MSGI, MSGO, and SET MON 0 are enabled, the display would be as follows. MSGI:ON MSGO: ON ALPH
STAT MSI	Provide status of all MSI cards.
STAT MSI x	Provide status of MSI card x associated with the active CPU.
STAT PRT	Provide status of all printers in system.
STAT PRT x	Provide status of printer x.
STAT TAPE	Provide status of all magnetic tape devices.

STAT TTY	Provide status of all TTY devices in system. Release 19 and later, this command enables you to get the status of the primary PMSI I/O port, and the Single Terminal Access (STA) administration terminal.
STAT TTY x	Provide status of TTY x. Release 19 and later, this command also provides the status of the primary PMSI port.
STAT XSM	Provide status of the system monitor. If there are no error conditions, PWR000 is output. Otherwise, the appropriate PWR messages are output.
TAPE x	Test magnetic tape device x. This command combines the TAPE CTRL x, TAPE MOTN x, TAPE RW x and TAPE DATA tests.
TAPE CTRL x	Test control electronics on tape device x.
TAPE DATA	Test data on all 4 tracks.
TAPE MOTN x	Test motion and timing on tape device x.
TAPE RW x	Test READ/WRITE ability of tape device x.
TTY x	Test TTY x. Response is: <pre> ABCDEFGHIJKLMNPOQRSTUVWXYZ 0123456789"#\$%*!&()<>-.:,.? READY FOR INPUT </pre> Anything entered on the keyboard will be echoed until END is input.

LD 38—Conference Circuit Diagnostic

This program is used to detect and isolate circuit faults on the conference equipment in the system.

LD 38 can detect problems on the conference circuit such as:

- channel faults on the network card which interfaces a conference card to the system
- channel faults on the conference card
- conference faults associated with conferee group numbers
- switching faults controlling the attenuation feature.

The program is used to

- enable a specific conference card
- disable a specific conference card
- check status of channels and conferee groups
- clear alarms and displays

The program allows complete manual control in establishing a test conference, thus allowing the user to listen for noise and distortion. This includes:

- selection of a specific conference card
- selection of a specific conferee group
- stepping through all free channels and groups with special test conference.

Basic commands

CDSP	Clears the maintenance display on active CPU to 00 or blank
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c
CNFC loop	Test conference loop
CNFC MAN loop g	Set up for manual conference on conference group g
CNFC STEP	Ready TTY for testing conferee groups
DISL loop	Disable conference loop
DISX loop	Disable Conf/TDS/MFS card on loop and loop - 1
END	Abort all current test activity
ENLL loop	Enable conference loop
ENLX loop	Enable Conf/TDS/MFS card on loop and loop - 1
LCNF loop	List busy and disabled conferee groups on specified loop
STAT loop	Provide status of conference card loop
STAT l s c u	List conference card and group used by specified TN.

Alphabetical list of commands

Command	Description	Pack/Rel
CDSP	Clears the maintenance display on active CPU to 00 or blank.	basic-1
CMIN ALL	Clear minor alarm indication on all attendant consoles.	basic-1
CMIN c	Clear minor alarm indication on attendant consoles for customer c.	basic-1
CNFC loop	Test conference loop. Tests conference loop for channel, group and switching faults. Note: Both the conference loop and the adjacent TDS/MFS loop must be enabled to run the conference test.	basic-1
CNFC MAN loop g	Set up for manual conference on conference group g. Only one manual conference is be allowed at a time. The conference group range is 1-15. After this command, any telephone dialing SPRE 93 enters the conference, where SPRE is the special service prefix for the system. Going on-hook from that telephone takes it out of the conference. If going On-Hook causes the conference to go from a three-party to a two-party call processing may remove all conference equipment and establish the remaining two parties as a normal call. The END command, which normally removes all telephones in the manual conference, will no longer affect these two telephones, as they are no longer using the conference card. If the CNFC MAN command is entered from a maintenance set, the telephone automatically becomes part of the manual conference.	basic-1
CNFC STEP	Ready TTY for testing conferee groups. Readies the TTY into a special command mode for testing various channels and conferee groups audibly, using two telephones: one to monitor and one to act as a signal source. The CNFC MAN command should have been used previously to set up the two-party conference. Entering C on the command input device will step the conference on to the next available channel.	basic-1

LD 38

Entering G will step to the next available conferee group.
Entering an asterisk (*) will revert back to the normal command mode.

Entering "END" or aborting LD 38 releases the manual conference.

DISL loop	Disable conference loop. For NT8D17 Conference/TDS/MFS cards, see ENLL command.	basic-1
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DISX loop	Disable NT8D17 Conf/TDS/MFS card.	xct-15
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Disables the entire combined Conference, Tone and Digit Switch, and MF Sender (XCT) card. Both the even numbered and adjacent loop are disabled.

Where: loop = 1, 3, 5,... 159

The DISL and ENLL commands can be used on the even number loop for the conference function. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The DISX and ENLX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card.

This command can be used in LD 34, LD 38 and LD 46.

END	Abort all current test activity. There will be a 30 second time-out dial tone for phones still off-hook.	basic-1
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ENLL loop	Enable conference loop.	basic-1
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For NT8D17 Conference/TDS/MFS cards the DISX and ENLX commands must be used whenever the faceplate switch of the card has been toggled. ENLL will software enable the card but the card will not be properly reset.

Enabling more than 16 conference loops may cause system to lock-up.

ENLX loop	Enable NT8D17 Conf/TDS/MFS card on loop and loop - 1.	xct-15
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Enables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled.

Where: loop = 1, 3, 5... 159

If one of the loops is already enabled, it is disabled and then both loops are enabled. The Conf/TDS card is not enabled automatically when it is inserted.

This command initiates card tests, downloads software and can be used in LD 34, LD 38 and LD 46.

The DISL and ENLL commands can be used on the even number loop for the conference function. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The DISX and ENLX commands are recommended.

Enabling more than 16 conference loops may cause the system to lock-up.

LCNF loop	List busy and disabled conferee groups on specified loop.	basic-1
STAT loop	Provide status of conference card loop. Output format is: 1. CNFC N DSBL N BUSY = number of conferee groups disabled and busy 2. CHAN N DSBL N BUSY = number of channels disabled and busy 3. UNEQ = card is not equipped in the system 4. DSBL = card is disabled in software	basic-1
STAT I s c u	Lists which conference card and conferee group is being used by the specified terminal number.	basic-1

LD 40, 42—Call Detail Recording Diagnostic

The Call Detail Recording (CDR) feature outputs call records to a single or multi-port tape drive storage system. The tapes are processed to produce billing reports.

The Pseudo TTY (PTY) and Call Processor (CP) cards do not support the CDR link maintenance commands (CDL, CTY) used in this Overlay. When using the STAT command in this LD, the output includes all the ports: CP and PTY.

Automatic diagnostic routines

LD 40 is run in background, during the daily routines, or automatically in response to CDR faults. It performs the following:

- CDR Link test.
- CDR Controller status report.
- CDR data transmission/loss summary.

Fault indications reported by LD 40 are cleared after their corresponding CDM message is output. Faults in a multi-port CDR Tape Controller are reported to all Meridian 1/Meridian SL-1 systems connected to the controller. The fault records kept for each Meridian 1/Meridian SL-1 are maintained and cleared independently of each other by the controller.

Loading LD 40 manually runs the automatic fault-clearing routines. Also, similarly to LD 42, the “CDMA loaded today” flag which prevents LD 40 from being automatically loaded more than once a day are cleared. Thus, manually loading LD 40 or 42 allows faults detected in the afternoon to be reported, even though previous faults may have been detected and cleared in the morning.

To run CDMA in background, you must reload LD 40 after a trouble has been cleared using LD 42. CDM117 X 3 is printed after LD 40 has been reloaded, where X is the Meridian 1/Meridian SL-1 link or port number. This reload is required so that the Meridian 1/Meridian SL-1 can react again as soon as another error is detected.

CDR maintenance mode and commands

Use LD 42 to:

- enable/disable/give status of CDR links and TTY
- perform diagnostic tests on CDR machines
- perform manual tape functions on CDR machines
- clear alarms and the maintenance display
- clear the maintenance display of CDR machines
- clear “CDMA loaded today” flags

The CDR storage system is put into maintenance mode to test the tape drive. While in maintenance mode, call records are saved in tape buffers. When all the buffer space is used up, incoming call records are lost. An 8K CDR machine can buffer about 600 call records; a 32K CDR can retain about 2500. Use the BUFF command to write the buffer contents to tape or output it to the I/O device.

Enter maintenance mode

- 1 Load CDM (LD 42).
- 2 Issue the PORT command to specify the CDR port.
- 3 Issue the GET command to put the CDR into maintenance mode.

GET sends the “Request Maintmode” message to CDR and waits for CDR to grant MAINTMODE, which CDR will not do until it is finished its current activity on the drive.

When CDR grants Maintenance Mode, it also makes available a tape buffer for the use of the read/write and RBC functions. This buffer may be loaded with data by using the LOAD command and the contents can be output onto the TTY by using the BUFF command without indicating which buffer to output (it defaults to the active maintenance buffer).

Exit maintenance mode

To ensure that CDR does not stay in maintenance mode forever, CDR starts a 30 second timer whenever it receives a request for maintenance mode. If this timer expires, CDR resets maintenance mode. To prevent this, CDM sends a message every 5 seconds to keep the CDR in maintenance mode.

If CDM does not send the message in time, CDR will reset maintenance mode and a CDM017 message will appear to indicate that maintenance mode has been lost. Pressing the UNLOAD button on CDR will also cancel maintenance mode.

The CDR may also be released from maintenance mode using the FREE command. When CDR leaves maintenance mode it returns to the state it was in before it entered maintenance mode. That is, if it was in a state in which it would not attempt to write on the drive, it will still not try to use the drive.

However, if it was using the drive before it entered the maintenance mode, it will use one of two methods to return to using the drive:

- If it left maintenance mode because of a time-out, it will rewind to LP and search for the first tape mark to locate the place where it should begin writing.
- If the FREE command was used to release it from maintenance mode, it will begin writing on the tape wherever the tape is. Thus, the tape should be left at the same point it was before maintenance mode was entered.

Ensure tape integrity

The following procedure is recommended to ensure tape integrity if manual tasks are to be performed on the drive using CDM:

- 1 UNLOAD the call recording tape from the drive.
- 2 Mount a scratch tape and put the drive on line but do not use any of the CDR pushbuttons. Call records are now being stored in tape buffers so this should only be done at low traffic periods.
- 3 Use CDM to issue the PORT and GET commands.
- 4 Perform tests using manual functions.
- 5 Issue the FREE command.
- 6 UNLOAD the scratch tape.
- 7 Remount the call-recording tape and press RESTORE to get the tape to the proper position for writing. If the tape is nearly full, a new call recording tape might be loaded instead to save time.

Verify proper recording

To verify that call records are being properly recorded on tape, the following procedure may be used:

- 1 Issue the PORT and GET commands to go into maintenance mode.
- 2 Issue the FUNC BKSP 1 command to position the tape just before the most recently written block.
- 3 Issue the FUNC READ command to read the most recently written block.
- 4 Issue the BUFF command to output the contents of the maintenance buffer on your I/O device.
- 5 Issue FREE to release the drive from maintenance mode.

This procedure may be modified easily to allow the checking of tape blocks older than the most recent. Extreme caution is advised, however, as it is easy to lose track of where the tape is positioned.

If it is suspected that the tape may not be positioned just after the last data block on tape when the FREE command is about to be issued, simply abort the program (****). This will cause the CDR machine to time out from maintenance mode after 30s, after which CDR will automatically restore tape position so that data recording can continue normally.

Basic commands

BLOC	Output hexadecimal contents of CDR tape block
BUFF	Output contents of CDR maintenance mode buffer
BUFF x	Output contents of tape buffer x
CCDS x	Clear maintenance display of CDR on link x
CDSP	Clear the maintenance display on active CPU to 00 or blank
CMIN AL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c
DIS LINK x	Disable device on link x
DIS SL1 x	Disable CDR device x
DIS TTY x	Disable device x
DISP pg addr cnt	Display CDR storage
ECHO x y	Perform echo test on link x, y times
END	Terminate command in progress
ENL LINK x	Enable link x
ENL SL1 x	Enable SL-1 machine connected to CDR link x
ENL TTY x	Enable TTY x
FREE	Release CDR from maintenance mode
FUNC function	Initiate specified tape drive function
GET	Put CDR tape unit into maintenance mode
LOAD xxxx	Set buffer for a WRITE
PORT	Reset port
PORT x	Set up links for commands to follow
STAT x	Get status of SDI x
STAT SL1 ALL, x	Get status of one or all CDR ports
STOR pg addr	Alter CDR storage information
TEST x	Write x sets of test records to tape

Alphabetical list of commands

Command	Description	Pack/Rel
BLOC	Output hexadecimal contents of CDR tape block.	clnk-1
BUFF	Output contents of CDR maintenance mode buffer.	clnk-1
BUFF x	Output contents of tape buffer x. For a single port CDR machine, $0 < x < 6$. For a 32K machine, $0 < x < 29$. The contents of the buffer may change while it is being output.	clnk-1
CCDS x	Clear maintenance display of CDR on link x.	clnk-1
CDSP	Clear the maintenance display on active CPU to 00 or blank.	clnk-1
CMIN ALL	Clear minor alarm indication on all attendant consoles.	clnk-1
CMIN c	Clear minor alarm indication on attendant consoles for customer c.	clnk-1
DIS LINK x	Disable device on link x.	clnk-1
DIS SL1 x	Disable CDR device x. This command should be issued before disconnecting another SL-1 machine from a multi-port CDR machine. DIS SL-1 x is the inverse of ENL SL-1 x. The commands may NOT be used to disable the SDI port currently being used by the CDM program; i.e., "you can't disable yourself." The enabled/disabled status of a SL-1 port in a multi-port CDR machine is maintained by the CDR machine only. If the CDR machine initializes for any reason - such as a power failure - then the enabled/disabled status of each SL-1 port is set according to whether the physical SDI device responds. For this reason, the enabled/disabled status of a SL-1 port in a multi-port CDR machine should not be considered trustworthy over extended periods of time.	clnk-1

LD 40, 42

Note also that disabling a SDI port in the CDR using the DIS SL-1 x command causes the report "SL1 x DSBL <type> SOFT" to be given by STAT SL1 x. This status indication remains even after the SDI pack has been physically pulled out, until the next CDR initialization.

DIS TTY x Disable device x. You may not disable the TTY you are logged into. clnk-1

DISP pg addr cnt Display CDR storage. Where: clnk-1

pg = memory page 0, 2 or 3.

cnt = the number of words to output. If cnt is not entered, one word will be output. No checking is performed on the validity of the address. If an invalid address is provided, the CDR machine will trap with a response time-out.

This command can be used to continue printing buffer contents, if time-out or transmission error occurs using the BUFF x command, rather than reissuing BUFF x and starting from the beginning again. In this case, the command is: DISP O addr 100

addr = given by the last 4-digit hexadecimal code preceding the colon in the last printed line.

ECHO x y Perform echo test on link x, y times. clnk-1

A test pattern is sent to the CDR machine and the machine echoes it back. OK is output if a successful response indicates a fault-free link. If y is not provided, the test is performed once only.

END Terminate command in progress. This command may be output at any time. clnk-1

ENL LINK x Enable link x. The specified link is checked for response and stuck interrupt. OK is output and the link enabled if the tests are passed. clnk-1

ENL SL1 x Enable SL-1 machine connected to CDR link x. clnk-1

This command is only valid for multi-port CDR machines. It enables new SL-1 machines connected to the CDR machine to communicate with the CDR, without interruption of service to existing SL-1 machines.

ENL TTY x	Enable TTY x. The specified TTY is checked for response and stuck interrupt. OK is output and the TTY is enabled once the tests are passed.	clnk-1
FREE	Release CDR from maintenance mode. If the CDR tape drive is enabled, then the next tape block that CDR has to write will be written wherever the tape was left. Thus, if the FUNC command was used on a tape which is to contain valid CDR data, it is imperative that the user reposition the tape to the same position that CDR had it before the FUNC command was used.	clnk-1
FUNC function	Initiate specified tape drive function. Initiates the specified function on the tape drive. “Function” may be one of: 1. STAT = status function 2. WID = write ID burst function 3. WTM = write tape mark 4. WFB = write contents of the maintenance tape buffer 5. READ = read block into maintenance buffer 6. RBC = perform read back check into maintenance buffer 7. SKIP x = skip x blocks in hexadecimal number 8. ERG = erase gap 9. ERAS = erase to end of tape 10. BKSP x = backspace x blocks in hexadecimal number 11. REW = rewind 12. UNL = unload 13. TERM = terminate These commands correspond to the primitive tape functions supported by the CDR tape handler firmware. The FUNC STAT command causes the tape status to be printed at the TTY. The tape status is the first word printed in response to the BLOC command and is the “status” field of a CDM122 error message. If the “unexpected interrupt” bit in the tape status is ON, a word corresponding to the “unexpected” field in a CDM122 message is printed.	clnk-1

LD 40, 42

GET	Put CDR tape unit into maintenance mode. When CDR is in this mode, it will not initiate any tape functions of its own. A tape buffer will be allocated for CDM to use for tape functions. Only one SL-1 system may put the CDR into maintenance mode at one time. See the description of maintenance mode.	clnk-1
LOAD xxxx	Set buffer for a WRITE. The hexadecimal digits xxxx are propagated through the tape buffer allocated for maintenance mode. The command is used to set the buffer for a WRITE.	clnk-1
PORT	Reset port. Resets the port so that no port is active. Enter the following commands only after a PORT command, and only from a TTY: DISP STOR BLOC TEST x BUFF (continued on next page) BUFF x GET LOAD xxxx FUNC FREE ENL SL-1 x DIS SL-1 x STAT SL-1 x	clnk-1

PORT x	Sets the links to which the following commands will apply. This command may only be entered from a TTY. Take care when using the following commands with PORT or PORT x, as the CDR may trap data or write erroneous data to tape. DISP STOR BLOC TEST x BUFF BUFF x GET LOAD xxx FUNC FREE ENL SL-1 x DIS SL-1 x STAT SL-1 x	clnk-1
STAT	Lists all SDI packs and specifies whether they are dedicated to data links or TTY; enabled or disabled. Output is: <pre>SDI x <tty/link> <enbl/dsbl><messages> <naks> <time-outs> <lost></pre> If the device is an enabled link, then the number of messages sent, the number of transmission errors and the number of lost call records are also output. See error code CDM121 for a description of the <> fields.	clnk-1
STAT SL1 ALL, x	Get status of one or all CDR ports. This command is used to output the status of ports in multiport CDR machines. The format of the output is: <code>status type mode</code> Where: <code>status</code> = UNEQ (unequipped), DSBL (Disabled) or ENBL (enabled) <code>type</code> = SNGL (single-port SDI) or DUAL (dual-port SDI) <code>mode</code> = May be IDLE (normal idle), BUSY (normal busy), SOF (software-disabled), NOIS (disabled for too many interrupts), STUC (disabled for stuck interrupt condition) or EIA (disabled for having EIA device not ready)	clnk-1

LD 40, 42

STAT x	Get status of SDI x. Output is: <tty/link> <enbl/dsbl/uneq> <messages> <naks> <time-outs> <lost> See error code CDM121 for a description of the <> fields.	clnk-1
STOR pg addr	Alter CDR storage information. The old contents of the location is output and the user is prompted for the new contents. After entering the new contents, enter a space or carriage return. If a carriage return is entered, the command ends. If a space is entered, the contents of the next location are output and the user is prompted for input. If only the carriage return or space is entered (i.e., the new contents are not input), then the current word is not modified. If an invalid address is provided, CDR will response time-out.	clnk-1
TEST x	Write x sets of test records to tape. Before using this command, refer to the description of the maintenance mode prior to this table. If x is not given, the default is 1. As this command writes to tape, a scratch tape should be mounted before the command is executed. PORT and GET commands must be issued before this command can be used. Twenty blocks of data are written to the tape, then the tape is rewound and read to check the data. The number of errors found is output using a CDM035 message.	clnk-1

LD 43—Equipment Datadump

This program is used to keep data on the system storage device up to date. When the datadump program is invoked, data in the read/write memory (including any that has been changed or added) is written to the storage device at the location reserved for it.

The program can be invoked daily as part of the daily routines or loaded manually. An incremental datadump occurs during the daily routines if database changes have been made.

When the datadump fails

In the event of an unsuccessful initial dump, the office data on the tape or disk is suspect. Another datadump with spool option should be done on the same tape or disk; if successful, a transient error is indicated and normal procedures can be resumed. If this second attempt also fails, **DO NOT** attempt another datadump until the fault is isolated and corrected.

If the storage medium is not proved faulty and the storage device appears serviceable, datadumping to an OLD device, if available, may help to pinpoint the problem.

Except during the troubleshooting phase, storage medium which has failed to datadump successfully must not be left in the storage device. Should a SYSLOAD occur with such a storage medium, the load may terminate abnormally with unpredictable results.

Low memory warning

Unprotected data store equal in size to the length of the records being written (i.e., 512 words) must be available to the datadump program.

A low memory warning message (SCH603) is issued when spare unprotected data store falls below a given threshold. Once this warning message has been issued, it is not possible to perform a datadump as the system requires spare unprotected data store equivalent to the size of a record on the storage medium (i.e., 512 words).

Users should ensure that these amounts of spare unprotected data store are available before attempting to perform a datadump.

Basic commands

BKO	Copy data from primary to backup device
DAT	Print the data issue and creation date of the primary and backup database
EDD	Invoke datadump program
EDD CLR	Clear datadump inhibit flag
EDD CN	Save CND names (use prior to datadump)
EDD HM	Save AWU, RMS and MR data (prior to dump)
EDD NBK	Inhibit database backup
EDD SA	Complete data dump and bypass software audit
PBX CF6 (ALLOWED)	Bit dumped with PBX data block
RES	Copy entire contents of backup to primary device
SWP	Swap (exchange) main and “.bak” data files on the primary flash drive

Alphabetical list of commands

Command	Description
BKO	Copy data base from primary device (Winchester disk) to backup device (floppy disk). BKO is applicable to systems with hard disk storage.
DAT	Print the creation date of the main, secondary, or backup database.
EDD	Invoke datadump program
EDD CLR	Clear datadump inhibit flag This flag is set because SYSLOAD or the conversion programs detect incomplete or inconsistent equipment data. Exercise caution since the use of this option may result in incorrect data being written.
EDD CN	Save CND names. EDD CN saves the names associated with DNs for Caller's Name Display. Use Prior to datadump.
EDD DP xx xx xx...	Dump patch Customer data and the specified patches (xx xx...xx) are dumped onto disk. If no patch numbers are specified, then only customer data is dumped.
EDD GP	Get patches
EDD IWC	Inhibits write check. Caution: for Emergency Use Only. Inhibits write check. This command is useful when the standard commands for datadump fail and end-of-file cannot be found. It writes an end-of-file on tape and allows other commands to be invoked.
EDD NBK	Inhibit database backup. Indicates that a database backup should not be done after a datadump. (Applicable to hard disk storage with floppy disk backup). This command invokes a data dump and writes entered data to primary and internal backup drives.

EDD NS	Inhibit tape far-end spool. Tape will not spool to the far-end and will not perform write test. Default option is SP. Overlay program cannot be aborted until writing has either been completed or has failed. This command applies to systems equipped with tape units.
EDD NX	Writes tape data records consistent in size with predefined system values. Default option is NX.
EDD SA	This command is used to complete the data dump and bypass the software audit of Peripheral Controller and superloop data.
EDD SP	Spool tape to far-end. This command applies to systems equipped with tape units. Spools tape to the far-end in order to even the tension on the tape. Also writes a test record after the end of existing data to check for any write problems. If errors occur during test, data should remain intact.
PBX CF6 (ALLOWED)	Bit dumped with PBX data block.
RES	Copy entire contents of backup device to primary device. The RES command may be entered to restore files to the primary device from the external backup device.
SWP	Exchange (swap) main and secondary database files. A sysload is required for the swap to take effect.

LD 44—Software Audit

The audit program (LD 44) monitors system operation and provides an indication of the general state of system operation. The program is concerned mostly with the system software. When a software problem is encountered, the program outputs an AUD message and attempts to clear the problem automatically.

Running software audit

The Audit program is enabled as a Background Program or Daily Routine in the configuration record. See prompts BKGD and DROL in LD 17. To load the Audit program manually, enter:

LD 44

R x

Where, x is the number of audit passes required.

Enter 0 for continuous auditing. R and x must be separated by a space or the system responds with:

```
AUD REQ ERR.  
AUDIT
```

The Meridian Mail MP data base audit (co-administration) is run during Audit if a data base mismatch is known by the system, or if it is being run manually.

LD 44

Page 552 of 848 LD 44—Software Audit

LD 46—Multifrequency Sender Diagnostic for ANI

This program is used to maintain the Multifrequency Sender card. The Multifrequency Sender pack provides multifrequency signals of Automatic Number Identification (ANI) digits over Centralized Automatic Message Accounting (CAMA) trunks to a toll switching CAMA, Traffic Operator Position System (TOPS) or Traffic Service Position System (TSPS).

The MFS diagnostic program can be run in background, during the daily routines, or manually to enter commands. It performs the following tests:

- checks that the MF Sender pack responds to system I/O functions
- tests the 30-channel memory locations, the 480 (30 x 16) digit buffer memory locations and the 64 First-in, First-out locations
- exercises all 15-digit codes with digit strings from 2 to 16 digits long and verifies both the 68 ms pulse width and whether each string outputpulses to completion

No check is possible on MFS frequencies used in each tone burst due to the lack of receivers in the system. Also, no check can be made as to whether the correct digits are being outputpulsed.

Basic commands

CDSP	Clear the maintenance display on active CPU to 00 or blank
CMAJ	Clear major alarm and reset power fail transfer
CMIN	Clear the minor lamp on a system basis
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c (not applicable for Release 22)
DISL loop	Disable MFS loop
DISX loop	Disable Conf/TDS/MFS card on loop and loop + 1
END	Stop all current testing
ENLL loop	Enable loop
ENLX loop	Enable Conf/TDS/MFS card on loop and loop + 1
MFS loop	Test and enable MFS loop
STAT loop	Get status of MFS loop
TONE loop	Enter input mode to provide MF tone bursts
TONE loop ALL	Provide MF tone bursts for all digits on specified loop

Alphabetical list of commands

Command	Description	Pack/Rel
CDSP	Clear the maintenance display on active CPU to 00 or blank.	basic-1
CMAJ	Clear major alarm, reset power fail transfer and clear power fault alarm.	basic-1
CMIN	Clear the minor lamp on a system basis.	alarm_filter-22
CMIN ALL	Clear minor alarm indication on all attendant consoles.	basic-1
CMIN c	Clear minor alarm indication on attendant consoles for customer c. (not applicable for Release 22)	basic-1
DISL loop	Disable MFS loop. For NT8D17 Conference/TDS/MFS cards, see ENLL command.	basic-1
DISX loop	Disable NT8D17 Conference/TDS/MFS card on loop and loop + 1. Disables the entire combined Conference, Tone and Digit Switch, and MF Sender (XCT) card. Both the even numbered TDS/MFS loop and adjacent conference loop are disabled. Where: loop = 0, 2, 4, . . . 158 The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The ENLX and DISX commands are recommended. The ENLX command must be used if the DISX command was used to disable the card. This command can be used in LD 34, LD 38 and LD 46.	xct-15
END	Stop all current testing.	basic-1
ENLL loop	Enable loop. For NT8D17 Conference/TDS/MFS cards the DISX and ENLX commands must be used whenever the faceplate switch of the card has been toggled. ENLL will software enable the card but the card will not be properly reset.	basic-1

LD 46

ENLX loop	Enable NT8D17 Conference/TDS/MFS card on loop and loop + 1. Enables all functions on the NT8D17 Conference/TDS card. Both the even numbered TDS/MFS loop and adjacent conference loop are enabled. Where: loop = 0, 2, 4... 158 If one of the loops is already enabled, it is disabled and then both loops are enabled. Enabling more than 16 conference loops may cause system to lock-up. This command initiates card tests, downloads software and can be used in LD 34, LD 38 and LD 46. The DISL and ENLL commands can be used on the even number loop for the TDS/MFS functions. However, this only prevents the loop from being used by software and does not affect the hardware status of the card. The ENLX and DISX commands are recommended. The Conf/TDS card is not enabled automatically when it is inserted.	xct-15
MFS loop	Test and enable MFS loop.	basic-1
STAT loop	Get status of MFS loop. Response is: LOOP UNEQ—loop is unequipped LOOP DSBL—loop is disabled CHAN yy—number of channels busy xx DSBL yy BUSY—number of channels disabled & busy NOT MFS—loop is not an MFS loop	basic-1
TONE loop	Enter input mode to provide MF tone bursts.	basic-1
TONE loop ALL	Provide MF tone bursts for all digits on specified loop (1 to 9, 0, 11 to 15, in that order).	basic-1

LD 48—Link Diagnostic

The Link Diagnostic program is used to maintain data links used with various special features and auxiliary data links. A maintenance telephone cannot use LD 48.

Automatic Call Distribution Links

When equipped with the Automatic Call Distribution (ACD) feature, the Meridian 1/Meridian SL-1 is supplemented with an Auxiliary Data Store (ADS) minicomputer system. The auxiliary data processor is located external to the Meridian 1/Meridian SL-1 and is connected via a high-speed link and a low-speed link.

The high-speed link is used for transmission of ACD-related messages between the Meridian 1/Meridian SL-1 and the auxiliary processor; the low-speed link is used for transmission of maintenance/error messages between the maintenance TTY (connected to the Meridian 1/Meridian SL-1) and the auxiliary processor.

Note: When enabling a high-speed link (using the command “ENL HSL” or “ENL SDI HIGH” in LD 48), the craftsperson must log out of the TTY to receive a message from the switch which confirms that the high-speed link (HSL) has been enabled.

Each Auxiliary Processor Link (APL) consists of a single Serial Data Interface (SDI) port connected via an interface cable to an interface port on the auxiliary processor.

ACD High speed and low speed link monitor

The ACD monitor diagnoses messages which flow across the link. This tool is useful to someone experienced with message formats and protocols.

APL monitor

The APL monitor is a tool used to diagnose the messages flowing across the link. This is only useful for someone experienced with the message formats and protocols.

Integrated Messaging System Links

The link maintenance capabilities provided for Integrated Messaging System (IMS) and Integrated Voice Messaging System (IVMS) links allow the link to be disabled/enabled and put into the maintenance mode.

The link software/hardware status can also be displayed. The program allows the craftsman to request that the printouts of all packed and/or unpacked messages be sent over a specified APL link.

Using print options (packed/unpacked messages) and observing the patterns of messages sent over the link, the most probable fault location (AUX, Meridian 1/Meridian SL-1 or SDI cable) can be determined.

Command and Status Links (CSL)

The Command and Status Link is an application protocol used for communication between the Meridian 1/Meridian SL-1 CPU and an external Value Added Server such as the Meridian Mail MP. The CSL runs on an Enhanced Serial Data Interface (ESDI) card.

In addition to the tests in LD 48, resident firmware diagnostics for the CSLs and ESDIs can output CSA, ESDA, ESDI error messages.

T1 Multipurpose Serial Digital Interface (TMDI) commands

The TMDI provides 1 port for ISDN Primary Rate D-channel (DCH) and 1 port for 1.5Mb/s Digital Trunk Interface (DTI).

The TMDI commands are listed below, **x** is the TMDI card number (defined by prompt DLOP in LD 17). These commands are provided in Link Diagnostic (LD 48) and D-channel Diagnostic (LD 96) and LD 42.

DIS TMDI x (ALL)	Disable TMDI card x (card)
DIS TMDI x u	Disable TMDI card x unit u
ENL TMDI x (ALL, FDL)	Enable TMDI card x (card, Forced Download)
ENL TMDI x u	Enable TMDI card x unit u
RST TMDI x	Reset TMDI card x
SLFT TMDI x	Invoke self-test for TMDI card x
STAT TMDI (x) (FULL)	Get status of TMDI card (x) (additional information)

Application Module Link (AML)

An Application Module Link (AML) provides a connection to applications such as Meridian Link. The AML is configured on an Enhanced Serial Data Interface (ESDI).

AML/CSL monitor

The AML monitor is a tool used to diagnose the messages flowing across the link. This is only useful for someone experienced with the message formats and protocols.

Voice Mailbox Administration (VMBA)

Voice Mailbox Administration (VMBA) and Meridian Mail 9. It allows for Integrated Voice Mailbox Administration.

Basic commands

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Basic commands

ACMS x	Automatic set-up for Command and Status link x
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c
CON ESDI x	Set up link layer of HDLC protocol
DIS AML x	Disable AML x
DIS AML x AUTO	Disable AUTO recovery on AML x (MSDL only)
DIS AML x LYR2	Disable layer two on AML x
DIS AML x LYR7	Disable layer seven on AML x
DIS AML x MDL	Disable MDL error reporting on AML x (MSDL only)
DIS AML x MON	Disable monitor on AML x (MSDL only)
DIS APL x	Put software AUX link x in maintenance mode
DIS CMS x	Disable Command and Status link x
DIS ESDI x	Disable ESDI x
DIS HSL	Disable the high-speed link
DIS ISDI x	Disable hardware AUX link SDI x
DIS MON	Disable the monitor-bit of high-speed link data
DIS MSDL x (ALL)	Disable MSDL device x
DIS MSGI x	Disable the MSGI option
DIS MSGO x	Disable the MSGO option
DIS PACI x	Disable the PACI option
DIS PACO x	Disable the PACO option
DIS PPRT x	Disable packet message print option on link x
DIS PRNT	Disable the print-bit of high-speed link data
DIS SDI HIGH	Disable the SDI port for high-speed link
DIS SDI LOW	Disable the SDI port for low-speed link
DIS STA x	Disable the STA application.
DIS UPRT x	Disable unpack message print on AUX link x
DSC ESDI x	Disconnect the link
ENL AML x	Enable AML x
ENL AML x ACMS	Enable automatic set-up on AML x (ESDI only)
ENL AML x AUTO	Enable AUTO recovery on AML x (MSDL only)
ENL AML x FDL	Force download loadware to the MSDL card and enable AML x
ENL AML x LYR2	Enable layer two on AML x
ENL AML x LYR7	Enable layer seven on AML x
ENL AML x MDL	Enable MDL error reporting on AML x (MSDL only)

ENL AML x MON	Enable monitor on AML x (MSDL only)
EST AML x	Establish layer two on AML x
ENL APL x	Put software AUX link x in non-maintenance mode
ENL CMS x	Enable CSL x
ENL ESDI x	Enable ESDI x
ENL HSL	Enable the high-speed link
ENL ISDI x	Enable AUX link SDI x
ENL MON	Print software information at maintenance TTY
ENL MSDL x (ALL, FDL)	Enable MSDL device x
ENL MSGI x	Print incoming messages from link x
ENL MSGO x	Print outgoing messages from link x
ENL PACI x	Print incoming messages from link x
ENL PACO x	Print outgoing messages from link x
ENL PPRT x	Enable packet message print option on link x
ENL PRNT	Connect high-speed link to TTY
ENL SDI HIGH	Enable SDI port for high-speed link
ENL SDI LOW	Enable SDI port for low-speed link
ENL UPRT x	Enable unpacked message print on link x
ENLX MSGI x p	Output incoming priority p messages from link x
ENLX MSGO x p	Output outgoing priority p messages from link x
ENL STA x (FDL)	Enable STA application. The MSDL card must be enabled to implement this command.
MAP AML (x)	Get physical address and card name of one or all AMLs
MAP STA x	Get information relating to the STA application.
RLS AML x	Release layer two on AML x
RSET ALL	Stop printing all messages on a line card
RSET BRIM	Stop printing of messages on SILC/UILC, MISP or digital line card
RSET IFx 1 PDL2 1	Stop printing SAPI 16 interface messages.
RSET IFx 1 PDNI n	Stop printing network interface messages.
RSET IFx I s c u BCH x	Stop printing B-channel terminal interface messages.
RSET IFx I s c u DCHx	Stop printing D-channel terminal interface messages.
RESET IMSG I s c dsl	Disable monitoring on incoming
RSET MISP loop AMO	Stop MISP printing of audit messages on MISP card
RSET MISP loop DGB	Exit MISP debug
RSET MISP loop MNT	Stop MISP printing of status messages on MISP card
RSET MISP loop MON	Stop printing of input/output messages on MISP card
RSET MPHm	Stop all Meridian Packet Handler message monitoring.
RSET OMSG I s c dsl	Disable monitoring on outgoing

RSET TNx	Stop printing messages on an ISDN BRI line card
RST MSDL x	Reset MSDL device x
SET MSG l s c dsl MON x	Set monitor on incoming msg
SET OMSG l s c dsl MON x	Set monitor on outgoing msg
SETM BRIM xxxx	Set printing of messages on SILC/UILC, MISP or digital line card
SETM IFx 1 PDL2 1	Set printing of SAPI 16 interface messages
SETM IFx 1 PDNI n	Set printing of network interface messages.
SETM IFx l s c u BCHx	Set printing of B-channel terminal interface messages.
SETM IFx l s c u DCHx	Set printing of D-channel terminal interface messages.
SETM MISP loop AMO	Set printing of audit messages on MISP card
SETM MISP loop DBG	Set debug option on MISP card
SETM MISP loop MNT	Set printing of status messages on MISP card
SETM MISP loop MON	Set printing of input/output messages on MISP card
SETM MPHm xxxx	Set printing of Meridian Packet Handler messages. Where: xxxx = the MPHs to be monitored
SETM TNx l s c u, 31	Set printing messages on a digital line card unit (u) or ISDN BRI line card (31)
SETM TNx l s c u, dsl	Set printing messages on a unit
SLFT AML x	Invoke self-test for AML x
SLFT ESDI x	Invoke ESDI and run self-test
SLFT MSDL x	Invoke self-test for MSDL device x
STAT AML (x)	Get AML status
STAT APL x	Display status of AUX link x
STAT CMS x	Get status of Command and Status link x
STAT CNFG	Get status of link monitor/simulator configuration
STAT CSDI x	Get status of SDI port x
STAT DSP LNK x	Get status of all Displays on link x
STAT ESDI x	Get status of ESDI x
STAT HSL	Get high-speed link status
STAT ISDI x	Get status of hardware AUX link SDI x
STAT LSL	Get low-speed link status
STAT MON (x)	Get status of one or all message monitors
STAT MSDL (x [FULL])	Get MSDL status
STAT SDI HIGH	Get status of high-speed link port
STAT SDI LOW	Get status of low-speed link port
STAT STA x	Get status of STA application.
SWCH AML x y	Switch active (x) and standby (y) AML
SWCH CMS x y	Switch active (x) and standby (y) CSL
UPLD AML x TBL x	Upload parameter Table 1 to 4 from AML x (MSDL only)

ACD High speed and low speed link commands

The following commands are used to enable, disable, test and check the status of an APL link.

Note: When enabling a high-speed link (using the command “ENL HSL” or “ENL SDI HIGH” in LD 48), the craftsperson must log out of the TTY to receive a message from the switch which confirms that the high-speed link (HSL) has been enabled.

DIS HSL	Disable the high-speed link
DIS SDI HIGH	Disable the SDI port for high-speed link
DIS SDI LOW	Disable the SDI port for low-speed link
ENL HSL	Enable the high-speed link
ENL SDI HIGH	Enable SDI port for high-speed link
ENL SDI LOW	Enable SDI port for low-speed link
STAT HSL	Get high-speed link status
STAT LSL	Get low-speed link status
STAT SDI HIGH	Get status of high-speed link port
STAT SDI LOW	Get status of low-speed link port

ACD High speed and low speed link monitor commands

The monitor is a tool used to diagnose the messages flowing across the link. This is only useful for someone experienced with the message formats and protocols.

DIS MON	Disable the monitor-bit of high-speed link data
DIS PRNT	Disable the print-bit of high-speed link data
ENL MON	Print software information at maintenance TTY
ENL PRNT	Connect high-speed link to TTY
STAT MON (x)	Get status of one or all message monitors

AML commands

The AML commands are listed below, where **x** is the AML logical device number (defined by prompt ADAN in LD 17). Some of these commands only apply to AMLs on an MSDL card.

DIS AML x	Disable AML x
DIS AML x AUTO	Disable AUTO recovery on AML x (MSDL only)
DIS AML x LYR2	Disable layer two on AML x
DIS AML x LYR7	Disable layer seven on AML x
DIS AML x MDL	Disable MDL error reporting on AML x (MSDL only)
DIS AML x MON	Disable monitor on AML x (MSDL only)
ENL AML x	Enable AML x
ENL AML x ACMS	Enable automatic set-up on AML x (ESDI only)
ENL AML x AUTO	Enable AUTO recovery on AML x (MSDL only)
ENL AML x FDL	Force download loadware to the MSDL card and enable AML x
ENL AML x LYR2	Enable layer two on AML x
ENL AML x LYR7	Enable layer seven on AML x
ENL AML x MDL	Enable MDL error reporting on AML x (MSDL only)
ENL AML x MON	Enable monitor on AML x (MSDL only)
EST AML x	Establish layer two on AML x
MAP AML (x)	Get physical address and card name of one or all AMLs
RLS AML x	Release layer two on AML x
SLFT AML x	Invoke self-test for AML x
STAT AML (x)	Get AML status
SWCH AML x y	Switch active (x) and standby (y) AML
UPLD AML x TBL x	Upload parameter table 1 to 4 from AML x (MSDL only)

AML over Ethernet (ELAN) commands

DIS ELAN	Disable ELAN (server task)
DIS ELAN x	Disable ELAN link number x (client task)
ENL ELAN	Enable ELAN (server task)
STAT ELAN	Check status of all configured ELANs
STAT ELAN	Check status of ELAN x

AML/CSL monitor commands

The AML monitor is a tool used to diagnose the messages flowing across the link. This is only useful for someone experienced with the message formats and protocols. These commands apply to CSLs or AMLs on ESDI cards and AMLs on MSDL cards.

DIS MSGI x	Disable output of incoming layer seven messages on AML x
DIS MSGO x	Disable output of outgoing layer seven messages on AML x
DIS PACI x	Disable output of incoming layer two messages on AML x
DIS PACO x	Disable output of outgoing layer two messages on AML x
DISM MSGI <link#><msg1><msg2>...	Disable message input/output monitoring excluding those specified incoming messages
DISM MSGO <link#><msg1><msg2>...	Disable message input/output monitoring excluding those specified outgoing messages
DSIM MSGI <link#>	Disable inclusive incoming message monitoring
DSIM MSGO <link#>	Disable inclusive outgoing message monitoring
DSIP MSGI <link#><pri><pri>...	Disable monitoring of inclusive priorities on incoming messages
DSIP MSGO <link#><pri><pri>...	Disable monitoring of inclusive priorities on outgoing messages
DSIT MSGI <link#><l><s><c><u>	Disable inclusive TN incoming message monitoring
DSIT MSGO <link#><l><s><c><u>	Disable inclusive TN outgoing message monitoring
DSXP MSGI <link#><pri><pri>...	Disable monitoring of exclusive priorities on incoming messages
DSXP MSGO <link#><pri><pri>...	Disable monitoring of exclusive priorities on outgoing messages
DSXT MSGI <link#><l><s><c><u>	Disable exclusive TN incoming message monitoring
DSXT MSGO <link#><l><s><c><u>	Disable exclusive TN outgoing message monitoring
ENIM MSGI <link#><msg1><msg2>...	Enable inclusive input/output message monitoring of only those specified incoming messages
ENIM MSGO <link#><msg1><msg2>...	Enable inclusive input/output message monitoring of only those specified outgoing messages
ENIP MSGI <link#><pri><pri>...	Enable inclusive input/output monitoring of incoming messages with specified priorities

ENIP MSGO <link#><pri><pri>...	Enable inclusive input/output monitoring of outgoing messages with specified priorities
ENIT MSGI <link#><l><s><c><u>	Enable inclusive input/output monitoring of incoming messages with specified TN
ENIT MSGO <link#><l><s><c><u>	Enable inclusive input/output monitoring of outgoing messages with specified TN
ENL MSGI x	Enable output of incoming layer seven messages on AML x
ENL MSGO x	Enable output of outgoing layer seven messages on AML x
ENL PACI x	Enable output of incoming layer two messages on AML x
ENL PACO x	Enable output of incoming layer two messages on AML x
ENXM MSGI <link#><msg1><msg2>...	Enable message input/output monitoring excluding those specified incoming messages
ENXM MSGO <link#><msg1><msg2>...	Enable message input/output monitoring excluding those specified outgoing messages
ENXP MSGI <link#><pri><pri>...	Enable input/output incoming message monitoring excluding messages with specified priorities
ENXP MSGO <link#><pri><pri>...	Enable input/output outgoing message monitoring excluding messages with specified priorities
ENXT MSGI <link#><l><s><c><u>	Enable input/output message monitoring excluding incoming messages with specified TN
ENXT MSGO <link#><l><s><c><u>	Enable input/output message monitoring excluding outgoing messages with specified TN
FLSH	Disable monitor and flash buffers
STAT MON (x)	Get status of one or all message monitors

Auxiliary Processor Link (APL) commands

The following commands are used to enable, disable, test and check the status of an APL link.

DIS APL x	Put software AUX link x in maintenance mode
DIS ISDI x	Disable hardware AUX link SDI x
ENL APL x	Put software AUX link x in non-maintenance mode
ENL ISDI x	Enable AUX link SDI x
STAT APL x	Display status of AUX link x
STAT DSP LNK x	Get status of all Displays on link x
STAT ISDI x	Get status of hardware AUX link SDI x

APL monitor commands

The APL monitor is a tool used to diagnose the messages flowing across the link. This is only useful for someone experienced with the message formats and protocols.

DIS PPRT x	Disable packet message print option on link x
DIS UPRT x	Disable unpacket message print on AUX link x
ENL PPRT x	Enable packet message print option on link x
ENL UPRT x	Enable unpacked message print on link x
ENLX MSGI x p	Output incoming priority p messages from link x
ENLX MSGO x p	Output outgoing priority p messages from link x
STAT CNFG	Get status of link monitor/simulator configuration
STAT CSDI x	Get status of SDI port x
STAT DSP LNK x	Get status of all Displays on link x

T1 Multipurpose Serial Digital Interface (TMDI) commands

The TMDI provides 1 port for ISDN Primary Rate D-channel (DCH) and 1 port for 1.5Mb/s Digital Trunk Interface (DTI).

The TMDI commands are listed below, **x** is the TMDI card number (defined by prompt DLOP in LD 17). These commands are provided in Link Diagnostic (LD 48) and D-channel Diagnostic (LD 96) and LD 42.

DIS TMDI x (ALL)	Disable TMDI card x (card)
DIS TMDI x u	Disable TMDI card x unit u
ENL TMDI x (ALL, FDL)	Enable TMDI card x (card, Forced Download)
ENL TMDI x u	Enable TMDI card x unit u
RST TMDI x	Reset TMDI card x
SLFT TMDI x	Invoke self-test for TMDI card x
STAT TMDI (x) (FULL)	Get status of TMDI card (x) (additional information)

Voice Mailbox Administration (VMBA) commands

Voice Mailbox Administration (VMBA) allows for Integrated Voice Mailbox Administration. Refer to the *Features and services* NTP for complete details.

DIS VMBA <vsid>	Disable the Voice Mailbox Administration application
DIS VMBA <vsid> AUDT	Disable the mailbox database audit
DIS VMBA <vsid> UPLD	Disable the mailbox database upload
ENL VMBA <vsid>	Enable the Voice Mailbox Administration application
ENL VMBA <vsid> AUDT	Enable the mailbox database audit
ENL VMBA <vsid> UPLD	Enable the mailbox database upload
STAT VMBA <vsid>	Get the status for the Voice Mailbox Administration application
STAT VMBA <vsid> AUDT	Get the status for the Voice Mailbox database audit
STAT VMBA <vsid> UPLD	Get the status for the Voice Mailbox database upload

Alphabetical list of commands

Command	Description
CMIN ALL	Clear minor alarm indication on all attendant consoles.
CMIN c	Clear minor alarm indication on attendant consoles for customer c.
DIS AML x	Disable AML x. Whenever the third parameter (LYR2, LYR7, etc.) is not typed, the overlay defaults the third parameter of the DIS command to LYR2. Therefore, this command is equivalent to DIS AML x LYR2. Refer to DIS AML x LYR2 command definition, for more information.
DIS AML x AUTO	Disable AUTO recovery on AML x (MSDL only). This command is not available for an ESDI AML.
DIS AML x LYR2	Disable layer two on AML x. MSDL Requirement: The MSDL card must be enabled. The AML link state can be any state other than the disabled state, and should not be in the process of self-test. Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time. MSDL Action: The AML link state is changed to the disable state. The MSDL port on which the AML is configured is disabled. ESDI: The ESDI port is disabled. The port must be idle.
DIS AML x LYR7	Disable layer seven on AML x. The MSDL or ESDI card must be enabled. The AML layer two must be enabled and established, and AML layer seven must also be enabled. Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x followed by ENL AML x LYR7 must have been executed at an earlier time. Action: A request to disable the AML layer seven is issued. SL-1 will stop sending polling messages to the far-end.

DIS AML x MDL	Disable MDL error reporting on AML x (MSDL only). MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled. Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time. MSDL Action: The MSDL AML loadware command to disable the debug monitor is sent to the MSDL card. This command is not available for ESDI AML.
DIS AML x MON	Disable monitor on AML x (MSDL only). MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled. Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time. MSDL Action: The MSDL AML loadware command to disable the debug monitor is sent to the MSDL card. This command is not available for ESDI AML.
DIS APL x	Put software AUX link x in maintenance mode.
DIS ELAN	Disable the ELAN (server task)
DIS ELAN x	Disable ELAN link number x (client task) If the application ELAN client task cannot be established from the Meridian 1, the Meridian 1 can disable the client task with this command.
DIS HSL	Disable the high-speed link.
DIS ISDI x	Disable hardware AUX link SDI x.
DIS MON	Disable the monitor-bit of high-speed link data.

DIS MSDL x (ALL)

Disable MSDL device.

When entered without the optional parameter, the disable MSDL command attempts to disable the MSDL card. Disabling the card via this command is permitted from either the Enabled (ENBL) state or the System Disabled (SYS DSBL) state.

When attempted on an MSDL that does not have any ports enabled, this command will succeed. The only exception to this is when the disable card message needs to be sent to the card, and there is no buffer currently available for building the message (MSDL015 is output to the TTY). In this unusual situation, attempting the command again will most likely result in success.

Application Overlays are not erased when the MSDL is disabled.

If there are any ports that are still running in the MSDL card, the 'ALL' option must be used to force disable the active ports. As an alternative to this command, the craftsperson can use the commands provided by the applications to disable the ports (D-channels or AML) individually, and then use the 'DIS MSDL x' command.

The command 'DIS MSDL x ALL' is not allowed if the active TTY (the terminal from which the command was entered) is supported on the MSDL card in question.

Software disable the logical channel prior to disabling the physical DNUM port.

- | | |
|-------------------|--|
| DIS MSGI x | Disable printing of messages on link x at input queue level.
Disable output of incoming layer seven messages on AML x. |
| DIS MSGO x | Disable printing of messages on link x at output queue level.
Disable output of outgoing layer seven messages on AML x. |
| DIS PACI x | Disable printing of input messages on link x at input buffer level. (disable output of incoming layer two messages on AML x) |
| DIS PACO x | Disable printing of output messages on link x at output buffer level. (disable output of outgoing layer two messages on AML x) |

- DIS PPRT x Disable packet message print option on link x.
- DIS PRNT Disable the print-bit of high-speed link data.
- DIS SDI HIGH Disable the SDI port for high-speed link.
- DIS SDI LOW Disable the SDI port for low-speed link.
- DIS STA x Disable the STA application.
- This command disables the application, the administration port, and any other additional ports. The associated ports must be disabled before using this command. x = the logical ID number identifying the STA application.
- DIS UPRT x Disable unpacket message print on AUX link x.
- DIS VMBA <vsid> Disable the Voice Mailbox Administration application. This command is used to disable the Voice Mailbox Application. Enter the command in the following format:

DIS VMBA <vsid> <NNNN>

Where:

vsid = The VAS ID number associated with VMBA.

NNNN = AUDT or UPLD for the database audit or upload.

AUDT and UPLD are optional entries. The VAS ID must be entered.

The Voice Mailbox audit and upload functions are aborted when the application is disabled. Be sure to get the status of those functions before disabling the application.

DIS VMBA <vsid> AUDT

Disable the mailbox database audit. This command aborts the audit function whether it was invoked manually or automatically.

DIS VMBA <vsid> UPLD

Disable the mailbox database upload. This command aborts the audit function whether it was invoked manually or automatically.

-
- DISM MSGI <link#><msg1><msg2>...
Disable message input/output monitoring excluding those specified incoming messages
- DISM MSGO <link#><msg1><msg2>...
Disable message input/output monitoring excluding those specified outgoing messages
- DSIM MSGI <link#>
Disable inclusive incoming message monitoring
- DSIM MSGO <link#>
Disable inclusive outgoing message monitoring
- DSIP MSGI <link#><pri><pri>...
Disable monitoring of inclusive priorities on incoming messages
- DSIP MSGO <link#><pri><pri>...
Disable monitoring of inclusive priorities on outgoing messages
- DSIT MSGI <link#><l><s><c><u>
Disable inclusive TN incoming message monitoring
- DSIT MSGO <link#><l><s><c><u>
Disable inclusive TN outgoing message monitoring
- DSXP MSGI <link#><pri><pri>...
Disable monitoring of exclusive priorities on incoming messages
- DSXP MSGO <link#><pri><pri>...
Disable monitoring of exclusive priorities on outgoing messages
- DSXT MSGI <link#><l><s><c><u>
Disable exclusive TN incoming message monitoring
- DSXT MSGO <link#><l><s><c><u>
Disable exclusive TN outgoing message monitoring
- ENIM MSGI <link#><msg1><msg2>...

Enable inclusive input/output message monitoring of only those specified incoming messages

ENIM MSGO <link#><msg1><msg2>...

Enable inclusive input/output message monitoring of only those specified outgoing messages

ENIP MSGI <link#><pri><pri>...

Enable inclusive input/output monitoring of incoming messages with specified priorities

ENIP MSGO <link#><pri><pri>...

Enable inclusive input/output monitoring of outgoing messages with specified priorities

ENIT MSGI <link#><l><s><c><u>

Enable inclusive input/output monitoring of incoming messages with specified TN

ENIT MSGO <link#><l><s><c><u>

Enable inclusive input/output monitoring of outgoing messages with specified TN

ENL AML x Enable AML x.

For MSDL: If AUTO recovery is off, then this command is the same as the ENL AML x LYR2 command. If AUTO recovery is on, an attempt is made to establish the link (layer two) and the application (layer seven).

For ESDI: This is the same as the ENL AML x LYR2 command.

ENL AML x ACMS

Enable automatic set-up on AML x (ESDI only). This command is valid only for ESDI AML and is not available on the MSDL AML. It is equivalent to ACMS x command.

ENL AML x AUTO

Enable AUTO recovery on AML x (MSDL only). This command is not available for ESDI AML links.

- ENL AML x FDL** Force download loadware to the MSDL card and enable AML x.
- MSDL Requirement: The MSDL card must be enabled. The AML link state must be in the disable state. All other MSDL AML links configured on the same MSDL card must be in the disable state. Example: ENL MSDL x must have been executed at an earlier time.
- MSDL Action: The MSDL AML loadware is downloaded to the MSDL card. While download is in progress a series of dots are output. Once the command is executed successfully the ENL AML x LYR2 command is executed automatically.
- ENL AML x LYR2** Enable layer two on AML x.
- MSDL Requirement: The MSDL card must be enabled. The AML link state must be in the disable state. Example: ENL MSDL x must have been executed at an earlier time.
- MSDL Action: The AML link state is changed to the release state. The MSDL port on which the AML is configured is enabled. If the ENL AML x command is executed successfully, and MSDL AML auto recovery is in the enable state, then the EST AML x is issued automatically.
- ESDI: The ESDI port is enabled. The ESDI card must first be disabled.
- ENL AML x LYR7** Enable layer seven on AML x.
- MSDL Requirement: The MSDL card must be enabled. The AML link should not be in the simulation mode. The AML layer two must be enabled and established, and AML layer seven must be disabled.
- Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x must have been executed at an earlier time.
- MSDL Action: A request to enable the AML layer seven is issued. Polling messages are sent to the far end.
- ESDI: Layer seven is enabled for the ESDI AML. The ENL AML x (LYR2) command must be completed successfully first.

- ENL AML x MDL Enable MDL error reporting on AML x (MSDL only).
MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.
Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.
MSDL Action: The MSDL AML loadware command to enable the MDL error reporting is sent to the MSDL card.
This command is not available for ESDI AML links.
- ENL AML x MON Enable monitor on AML x (MSDL only).
MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.
Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.
MSDL Action: The MSDL AML loadware command to enable the debug monitor is sent to the MSDL card
This command is not available for ESDI AML links.
- ENL APL x Put software AUX link x in non-maintenance mode.
- ENL ELAN Enable ELAN server task
When the application establishes connection to a Meridian 1 via this ELAN, a client process will be spawned for this application. The APP_IP_ID (Port ID and IP address) of each connection will be passed into the Meridian 1.
- ENL HSL Enable the high-speed link.
When enabling a high-speed link, the craftsperson must log out of the TTY to receive a message from the switch which confirms that the high-speed link (HSL) has been enabled.
- ENL IALM <vsid> Enable the integrated alarms application on the specified VAS. A VAS011 message is printed if the application is successfully enabled and a VAS012 if it is not.
- ENL ISDI x Enable AUX link SDI x.

ENL MON	Print software information at maintenance TTY. This command causes software information being sent to the auxiliary processor to be printed at the TTY. This information would include counts of Cumulative Negative Acknowledgments (NAKs), time-outs and many other control characteristics of the link. Use this command only when the ACD is handling light traffic. Otherwise, the TTY will be overloaded from the high volume of messages.
ENL MSDL x (FDL, ALL)	Enable MSDL card. When entered without any of the optional parameters, the enable MSDL command attempts to enable the MSDL card. Enabling the card via this command is only permitted if the card is currently in the Manually Disabled (MAN DSBL) state. The enable card succeeds if: 1. the card is resident in the shelf 2. it has passed all the self-tests 3. the MSDL base software has been downloaded and is responding If the MSDL base software and any configured application software has not been downloaded, or if the version of the software on the card is different from the version on the system disk, software download occurs. While download is in progress, a series of dots (".") are output. If the FDL (forced download) option is entered, the MSDL base software and all the configured applications will be downloaded regardless if the application already exists on the card. Following the download, the card will be enabled. If the ALL option is entered, the card will be enabled (provided the three conditions mentioned above are met), all the applications will be downloaded if necessary and then an attempt will be made to enable all the links/ports configured on the card. Additionally, the enable command with the ALL option can be entered when the card is already in the enabled state. This allows you to enable any disabled links/ports through one command. It is not possible to use both the ALL and the FDL options in the same command.

ENL MSGI x Print incoming messages from link x. Enable output of incoming layer seven messages on AML x.

This command allows printing of all incoming message received over link x on the maintenance output device. The SSD signaling messages and the program input are not printed. This is typically used to check the validity of incoming messages for the different queues.

ENL MSGO x Print outgoing messages from link x. Enable output of outgoing layer seven messages on AML x.

This command allows printing for all outgoing messages over link x on the maintenance output device. This is typically used to check the validity of outgoing messages sent from the application layer to the output queue.

ENL PACI x Print incoming ESDI messages from link x. Enable output of incoming layer two messages on AML x.

When enabled, all incoming messages received on link x to the ESDI are printed on the maintenance TTY, including SSD signaling messages. Typically this is used to check the correctness of the incoming messages as received from the ESDI in the data block format.

ENL PACO x Print outgoing ESDI messages from link x. Enable output of incoming layer two messages on AML x.

When enabled, all outgoing messages are sent through link x to the ESDI and are printed on the maintenance TTY. The message will be printed in the data block format required by the ESDI.

ENL PPRT x Enable packet message print option on link x. Printouts can be up to 7 lines in length and are of the form:

```
APLO xxx y xxx. . . x
APLI xxx y xxx. . . x
```

Where:

APLO = the message is output from the Meridian 1
APLI = the message is input to Meridian 1 from AUX
xxx = number of the APL link.
y = number from 0 to 6 indicating the printout line number of the message. This field is not used for ACK and NAK messages.

ENL PRNT	Connect high-speed link to TTY. Disconnects the high-speed link from the AUX and connects it instead to an RS-232-C compatible TTY device. This disrupts communication between the Meridian 1 and the auxiliary processor. It enables ACD related messages (which would normally be sent to the auxiliary processor) to be printed at the TTY connected to the high-speed link. Normal communications between the Meridian 1 and the auxiliary processor will not continue if the ENL PRNT command is inputted while the Meridian 1 and auxiliary processor are still connected. A different message format is used between the Meridian 1 and the auxiliary processor. This condition will cause the HSL to go down because the auxiliary processor cannot interpret this other message format.
ENL SDI HIGH	Enable SDI port for high-speed link. When enabling a high-speed link, the craftsperson must log out of the TTY to receive a message from the switch which confirms that the high-speed link (HSL) has been enabled.
ENL SDI LOW	Enable SDI port for low-speed link.
ENL STA x (FDL)	Enable STA application. The MSDL card must be enabled to implement this command, where: x = the logical ID number identifying the STA application. FDL = force download the application. If not invoked, the application is downloaded only when needed
ENL UPRT x	Enable unpacked message print on link x. Printouts are of the form: APLMxxx aa b c zzzz. . . z Where: APLMxxx = indicates unpacked message over link xxx aa = indicates the message length b = indicates the application type c = indicates the message type zzz = these fields are the message body, depending on the application and message type

ENL VMBA <vsid>

Enable the Voice Mailbox Administration application. Enter the command in the following format:

ENL VMBA <vsid> <NNNN> ALL/xxxx

Where:

vsid = The VAS ID number associated with VMBA.

NNNN = AUDT or UPLD for the mailbox database audit or upload functions.

ALL/xxxx = Enable NNNN for ALLDNs with Voice Mailboxes, or a specific DN (xxxx).

NNNN and ALL/xxxx are optional entries. The VAS ID must be entered to initiate this command.

ENL VMBA <vsid> AUDT

Enable the mailbox database audit. Enter the command in the following format:

ENL VMBA <vsid> AUDT ALL/xxxx

The audit can be implemented for a specific Directory. Number by entering the DN following the audit command:

ENL VMBA <vsid> AUDT xxxx

The upload can also be enabled for all DN's eligible for a Voice Mailbox by entering ALL following the audit command:

ENL VMBA <vsid> AUDT ALL

ENL VMBA <vsid> UPLD

Enable the mailbox database upload. Enter the command in the following format:

ENL VMBA <vsid> UPLD ALL/xxxx

The upload can be implemented for a specific Directory. Number by entering the DN following the upload command:

ENL VMBA <vsid> UPLD xxxx

The audit can also be enabled for all DN's configured with Voice Mailboxes by entering ALL following the upload command:

ENL VMBA <vsid> UPLD ALL

-
- ENLX MSGI x p** Output incoming priority p messages from link x.
- When enabled by the user, all incoming messages received on link x are output, excluding the messages with specified priorities, where “p” is the message priority, and where:
- 1 = the system priority
 - 2 = signaling priority
 - 3 = call processing priority
 - 4 = administration priority
- ENLX MSGO x p** Output outgoing priority p messages from link x.
- When enabled by the user, all outgoing messages sent through link x are output, excluding the messages with specified priorities, where “p” is the message priority, and where:
- 1 = the system priority
 - 2 = signaling priority
 - 3 = call processing priority
 - 4 = administration priority.
- EST AML x** Establish layer two on AML x.
- The layer two is established for the AML configured on the given MSDL port. The layer two is connected for the AML configured on the ESDI card.
- MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled and released.
- Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.
- MSDL Action: The MSDL AML link state is changed into the established state. If EST AML x executes successfully, and provided that the MSDL AML AUTO recovery is enabled, next the ENL AML x LYR7 is executed automatically.
- ESDI: Layer two is connected for the ESDI AML. The port must be enabled first.
- ENXM MSGI <link#><msg1><msg2>...**
- Enable message input/output monitoring excluding those specified incoming messages
- ENXM MSGO <link#><msg1><msg2>...**
- Enable message input/output monitoring excluding those specified outgoing messages

ENXP MSGI <link#><pri><pri>...

Enable input/output incoming message monitoring excluding messages with specified priorities

ENXP MSGO <link#><pri><pri>...

Enable input/output outgoing message monitoring excluding messages with specified priorities

ENXT MSGI <link#><l><s><c><u>

Enable input/output message monitoring excluding incoming messages with specified TN

ENXT MSGO <link#><l><s><c><u>

Enable input/output message monitoring excluding outgoing messages with specified TN

FLSH Disable monitor and flash buffers

MAP AML (x) Get physical address and card name of one or all AMLs.

This command outputs the card name and physical card address and ports for one or all AMLs. This information is also output with the STAT AML command. For example:

```
MAP AML
AML: 05      ESDI: 04
AML: 12      MSDL:07      PORT:1
```

MAP STA x Get information relating to the STA application.

This command displays the logical, physical, and port allocation information related to the STA application. If the ID number (x) is not specified, the information for all existing STAs is given.

RLS AML x	Release layer two on AML x. The layer two is released for the AML link configured on the given MSDL port. The layer two is disconnected for the AML configured on the ESDI card. MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled and established. Example: ENL MSDL x followed by ENL AML x LYR2 followed by EST AML x must have been executed at an earlier time. MSDL Action: Prior to the execution of the RLS AML x, if the MSDL AML layer seven is enabled, the DIS AML x LYR7 is automatically executed. The MSDL AML state is changed to the release state. ESDI: The layer two is disconnected for the ESDI AML port. The port must be in the connected and idle state first.
RSET ALL	Stop printing all messages on a line card.
RSET BRIM	Stop printing of messages on SILC/UILC, MISP or digital line card.
RSET IFx 1 PDL2 1	Stop printing SAPI 16 interface messages.
RSET IFx 1 PDNI n	Stop printing network interface messages.
RSET IFx l s c u BCH x	Stop printing B-channel terminal interface messages.
RSET IFx l s c u DCHx	Stop printing D-channel terminal interface messages.
RSET MSG l s c dsl	Disable monitoring on incoming
RSET MISP x AMO	Stop printing of audit messages on MISP specified. Where: x = loop .
RSET MISP x DGB	Exit MISP debug. Where: x = loop .

RSET MISP loop MNT

Stop printing of status messages on MISP specified.
Where: x = loop.

RSET MISP x MON

Stop printing of input/output messages on MISP specified.
Where: x = loop.

RSET MPH M

Stop all Meridian Packet Handler message monitoring.

RSET OMSG I s c dsl

Disable monitoring on outgoing

RSET TNx

Stop printing messages on an ISDN BRI line card.
Where: x = 0-6 (TN0-TN6).

RST MSDL x

Reset MSDL card.

This command causes a power-on reset on the MSDL, followed by a series of short self-tests. Resetting the card via this command is only permitted if the card is in the Manually Disabled (MAN DSBL) state.

SET IMSG I s c dsl MON x

Set monitor on incoming msg

SET OMSG I s c dsl MON x

Set monitor on outgoing msg

SETM BRIM xxxx

Set printing of messages on SILC/UILC, MISP, or digital line card.

This command is used to select various message types for printing on a given TN (defined by SETM TNx commands). The value of xxxx is a HEX word which determines the message types.

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
				X						X	X	X	X	X	X

Bit 0 = Input SSD message from BRI line cards.

Bit 1 = Output SSD message to BRI line cards.

Bit 2 = Input expedited (high priority) message from BRIL application on MISP.

Bit 3 = Output expedited (high priority) message from BRIL application on MISP.

Bit 4 = Input ring message from BRIL application on MISP.

Bit 5 = Output ring message from BRIL application on MISP.

Bit 11 = Call processing error message.

All other Bits are for future use. Note that the SETM TNx command must have been issued before issuing this command.

Examples:

To print input SSD and expedited messages:

SETM BRIM 0005 (i.e., 0000000000000101)

To print input and output expedited messages:

SETM BRIM 000C (i.e., 0000000000001100)

SETM IFx 1 PDL2 1

Set printing of SAPI 16 interface messages.

SETM IFx 1 PDNI n

Set printing of network interface messages.

SETM IFx 1 s c u BCHx

Set printing of B-channel terminal interface messages.

SETM IFx 1 s c u DCHx

Set printing of D-channel terminal interface messages.

SETM MISP x AMO

Set printing of audit messages on MISP specified.

Where: x = loop.

These messages are sent from the MISP handler to the MISP basecode. This command is used to turn these messages back on once they have been turned off because:

- debug or monitor (MON) mode is enabled
- RSET x AMO command has been issued

SETM MISP x DBG

Set debug option on MISP specified. Where: x = loop.

The card must be disabled first. The debug option has the following effect when the MISP is enabled:

- turns off the sanity timer
- stops interface handler audit messages
- no timestamp messages are sent to the MISP card

This command requires a password. The “dot” prompt indicates debug mode is turned on.

SETM MISP x MNT

Set printing of status messages on MISP specified.

Where: x = loop.

These messages indicate:

- error indication messages from the MISP
- state of L1 on SILC/UILC and L2/L3 on MISP

This option setting is lost during an initialization.

SETM MISP x MON

Set printing of input/output messages on MISP card.
Where: x = loop.

Both the expedited and ring input/output messages are printed. This command also sets the debug option and requires a password.

This command turns on all input/output messages. This may use up all system print registers and may cause system initialization. Therefore use this command with caution.

The debug option is turned off by a system initialization. Restarting debug will also restart the input/output monitoring.

DISABLE MISP prior to issuing this command, re-enable MISP after command issued.

SETM MPHx xxxx

Set printing of Meridian Packet Handler messages.
Where: xxxx = the MPHs to be monitored

SETM TNx l s c u, 31

Set printing messages on a digital line card unit (u) or ISDN BRI line card (31). This command is used in conjunction with the SETM BRIM command.

The value x is a tag number (0-6). For ISDN BRI line cards, you must enter "l s c 31" for the address.

SETM TNx l s c u, dsl

Set printing messages on a unit. This command is used in conjunction with the SETM BRIM command. The value x is a tag number (0-6).

SETM TNx y

Set printing messages on a digital line card unit or ISDN BRI line card. Where:

x = tag number 0-6 (TN0-TN6)

y = l s c u (loop, shelf, card, and unit) or l s c dsl (loop, shelf, card, and digital subscriber loop).

If u = 31 when a S/T (SILC) or U (UILC) Interface Line Card is specified for the y parameter, then messages for that line card are printed. This command must be issued before the SET BRIM command.

SLFT AML x	Self-test on AML x. This command runs the local loop back test for MSDL AML, and the ESDI self-test for the ESDI AML. MSDL Requirement: The MSDL card must be enabled. The AML layer two must be disabled. Example: ENL MSDL x must have been executed at an earlier time. MSDL Action: The MSDL AML local loop back test is executed and upon completion of the test the MSDL AML port is set to the disable state.
SLFT MSDL x	Execute a self-test on MSDL card x. This command causes a power-on reset on the MSDL, which will be followed by a complete set of self-tests. This command only executes self-tests if the card is in the Manually Disabled (MAN DSBL) state. If the self-tests pass, a message indicating this and card id is output. If the self-tests fail, a message is output describing which self-test failed. It is useful to note that the first test that fails will abort the self-test sequence, so this command only indicates one test failure, even if multiple tests might fail.
STAT AML (x)	Get AML status. This command outputs the status of layer two and layer seven of one or all configured AMLs. The designation (DES) of the AML is output if it has been defined for the port in LD 17. Examples: <pre>AML: 01 MSDL: 08 PORT: 00 LYR2: DSBL AUTO: OFF LYR7: DOWN DES: MERIDIAN_MAIL AML: 04 ESDI: 10 LYR2: EST AUTO: ON LYR7: ACTIVE</pre>
STAT APL x	Display status of AUX link x.

STAT CNFG	Get status of link monitor/simulator configuration. Display link monitor/simulator configuration status. The system will respond according to the current configuration as follows: — *NOT CONFIG - if system is not configured — *CNFG INT/SIM - CSLAPL x - CSLSIM x if the system is in internal maintenance mode; shows link numbers of CSLSIM and CSL application program — *CNFG FLD - CSL x if the system is in field maintenance mode; shows CSL link number
STAT CSDI x	Get status of SDI port x.
STAT DSP LNK x	Get status of all Displays on link x.
STAT ELAN	Check status of all configured AML over Ethernet (ELAN) links
STAT ELAN x	Check status of specific AML over Ethernet (ELAN) link x
STAT HSL	Get high-speed link status. Response can be either: 1. UP 2. DOWN, or 3. NOT READY
STAT ISDI x	Get status of hardware AUX link SDI x.

STAT MON (x)

Get status of one or all message monitors.

The system will respond with the status. If all monitors are disabled, the response is:

```
MSGO DIS
MSGI DIS
PACO DIS
PACI DIS
X25I DIS
X25O DIS
```

If the monitor function is enabled, for outgoing messages on two links, the response is: MSGO ENL CSL x

STAT MSDL (x (FULL))

Get MSDL status.

This command outputs the status of MSDL cards. Without any optional parameters (no card number, etc.), the status of all MSDL cards in the system is output.

When a card number alone is provided with the command, the status of the card is output along with additional information regarding the applications configured on the card.

Specifically, for each D-channel or AML configured on the card, the application name, logical number and port status is output.

For example:

```
MSDL x: ENL
AML 11 DIS      PORT 1
DCH 25 OPER PORT 2
AML 03 OPER PORT 3
```

If the FULL option is entered along with the MSDL number, the Meridian 1 outputs all the information output for the 'STAT MSDL x' command along with the following additional information:

- card ID
- bootloader firmware version
- basecode version
- basecode state
- when the basecode was activated (if it is active)
- each application version
- each application state
- when each the application was activated (if it is active)

The card status is output on the first line and can be any one of the following:

MSDL x: ENBL - card is enabled

MSDL x: MAN DSBL - card disabled by the DIS MSDL command

MSDL x: SYS DSBL reason - card has been disabled by the system

The system disabled state may be due to any of the following:

1. SYS DSBL- NOT RESPONDING

If the MSDL is in this state, the implication is that the Meridian 1 has attempted to communicate with the MSDL and was not successful. It is possible that the card is not present in the shelf. If it is present, then it is possible that the software on the card is unable to respond to messages from the Meridian 1.

Action: Check to see if the card is properly inserted in its slot. If it is (and has been for more than a few minutes), then check the console output for MSDL or ERR messages and take the appropriate action for the error message.

It may be that the rotary switch setting on the MSDL card is not set properly. To keep the Meridian 1 from continuously attempting recovery of the MSDL, use the 'DIS MSDL x' command to put the card in the Manually Disabled (MAN DSBL) state.

2. SYS DSBL- SELF-TESTING

If the MSDL is in this state, self-tests are in progress.

Action: Wait for self-tests to complete and for the Meridian 1 to examine the results. Under normal circumstances, self-tests take less than one minute to complete. However, when an erasable EPROM on the card has been cleared, self-tests may take between five and six minutes to complete. Therefore, it is prudent not to take any action at this time.

3. SYS DSBL- SELF-TESTS PASSED

This is a transient state. A card in a transient state has successfully completed self-tests and the Meridian 1 either is about to begin downloading the MSDL base software, or has just completed downloading the MSDL base software and is about to attempt to enable the card.

Action: Wait for the Meridian 1 to begin the next step of recovery. If a more immediate recovery is desired, use the 'DIS MSDL x' command followed by the 'ENL MSDL x' command. This causes essentially the same recovery action to be taken. However, it may be faster (since it is being done as a result of input from the craftsperson).

4. SYS DSBL- SELF-TESTS FAILED

If the MSDL is in this state, self-tests have executed and failed on this card.

Action: Use the 'STAT MSDL x' command to determine reason for self-test failure. Disable the MSDL card using the 'DIS MSDL x' command, then use the 'SLFT MSDL x' command to execute the self-tests again.

If the self-tests pass, attempt to enable the card using the 'ENL MSDL x' command. If the card fails the self-tests again, record the results and replace the card.

5. SYS DSBL- SRAM TESTS FAILED

If the MSDL is in this state, self-tests have executed and passed, however when the Meridian 1 attempted to perform read/write tests to the shared RAM on the MSDL, it detected a failure.

Action: Same as for self-test failure. If the attempt to enable the card fails, record the results and replace the card.

6. SYS DSBL- OVERLOAD

The Meridian 1 has received too many messages from the MSDL. This is considered to be unacceptable, in that this much of a demand may interfere with other system functions.

Action: If the MSDL is left in this state, the Meridian 1 will attempt to bring the card back into service within a few minutes. If this is not desired, disable the card using the 'DIS MSDL x' command.

It is also advisable to identify a specific port or application that may be responsible for the overload. The identification can be made by disabling individual links/ports on the MSDL and letting the remaining links/ports operate normally.

7. SYS DSBL- RESET THRESHOLD

If the MSDL is in this state, the Meridian 1 has detected more than four resets within ten minutes. This is considered to be unacceptable, as a normally operating card should not reset so often.

It is possible that the card may be in this state due to a Fatal Error or Self-test failure from which no recovery was successful. (As the recovery from Fatal Errors and Self-test failures begins with resetting the card, repeated attempts at recovery may cause the reset threshold to be reached.)

Action: Disable the card using the 'DIS MSDL x' command and execute the 'SLFT MSDL x' command. If self-tests pass, attempt to enable the card using the 'ENL MSDL x' command. If the problem recurs, try force downloading the software to the MSDL using the 'ENL MSDL x FDL' command.

If the problem continues to recur and resets continue because of a repeated fatal error, attempt to isolate the problem by disabling all links/ports controlled by one application (e.g., all D-channels or all AMLs). If no manual intervention is taken by the craftsperson, the Meridian 1 will attempt to bring the card back into service beginning at midnight.

8. SYS DSBL- FATAL ERROR

If the MSDL is in this state, the card encountered a fatal condition from which it could not recover. In response to the 'STAT' command, the cause of the fatal error will be displayed.

If the 'STAT' command is not entered while the card is in this state, the MSDL302 message printed at the time of the state transition will indicate the cause of the fatal error.

Action: The Meridian 1 will attempt to bring the card back into service automatically. While the card is in this state, it is recommended that the craftsperson do nothing. If the Meridian 1 is unable to recover the card, the system disabled substate will be changed to indicate the reason recovery was not possible. The craftsperson should then take the recommended action for that new substate.

9. SYS DSBL- NO RECOVERY ATTEMPTED UNTIL MIDNIGHT

When this is output after the SYS DSBL message, the Meridian 1 has attempted to recover the card but has repeatedly failed. One example of this condition is when the background recovery mechanism has failed to download the MSDL Base Code five times in a row.

Action: Disable the card using the 'DIS MSDL x' command, test the card using the 'SLFT MSDL x' command, and if self-tests pass, enable the card using the 'ENL MSDL x' command.

If downloading of the MSDL Base Code is necessary, it will be attempted in response to the enable command. If no manual intervention is taken, the Meridian 1 will again attempt recovery beginning at midnight.

STAT SDI HIGH	Get status of high-speed link port. The response can be either ENL (enabled) or DIS (disabled).
STAT SDI LOW	Get status of low-speed link port. The response can be either ENL (enabled) or DIS (disabled).
STAT STA x	Get status of STA application. When x (STA ID number) is specified, the STA state, port number, port type, port state, and system description are displayed. If x is not specified, and the application is enabled, the state and port information is given. If x is not specified, and the application is in any state other than enabled, only the STA status is given. No port or system information is displayed. .

Possible output follows:

1. Application state and Target state:
ENABLED, MANUAL DISABLE, SYSTEM DISABLE,
AWAIT DISABLE, AWAIT APPL ENABLE, AWT CONF
DOWNLOAD
2. Port type: ADM, SYS, TTY
3. Port state:
NO SDI/STA, DISABLED, ENABLED, TESTING,
KEYBOARD TST, AWAIT VT-200, DTR DOWN,
AUTOBAUDING, AWT AUTOBAUD, ABD SCANNING,
DEFAULT ABD, NO MODEM, IN SESSION, AWAIT
ENABLE

System description is entered as part of the port configuration. For the additional port used to shadow the STA application, the system description is SHADOW TTY.

STAT VMBA <vsid>

Get the status for the Voice Mailbox Administration application. Enter the command in the following format:

STAT VMBA <vsid> <NNNN>

Where:

vsid = the VAS ID where the VMBA is configured
NNNN = VMBA audit or upload function. You may enter either AUDT or UPLD, where:

AUDT = mailbox database audit, or

UPLD = mailbox database upload

AUDT and UPLD are optional entries. The VAS ID must be entered. The status output is shown below:

STAT VMBA <vsid>

VMBA <ACTIVE or INACTIVE>

AUDIT <ACTIVE or INACTIVE>

UPLOAD <ACTIVE or INACTIVE>

STAT VMBA <vsid> AUDT

AUDIT INACTIVE, or AUDIT ACTIVE

Where:

n AUDITED

n MISMATCHES FOUND/CORRECTED

n ERRORS

STAT VMBA <vsid> UPLD

UPLOAD INACTIVE, or UPLOAD ACTIVE

Where:

n UPLOADED

n DELETED

n ERRORS

STAT VMBA <vsid> AUDT

Get the status for the Voice Mailbox Database audit. Enter the command in the following format.

STAT VMBA <vsid> AUDT

The status output is shown below:

STAT VMBA <vsid> AUDT

AUDIT INACTIVE, or AUDIT ACTIVE

Where:

n AUDITED

n MISMATCHES FOUND/CORRECTED

n ERRORS

STAT VMBA <vsid> UPLD

Get the status for the Voice Mailbox Database upload. Enter the command in the following format.

STAT VMBA <vsid> UPLD

The status output is shown below:

STAT VMBA <vsid> UPLD

UPLOAD INACTIVE, or UPLOAD ACTIVE

Where:

n UPLOADED

n DELETED

n ERRORS

SWCH AML x y Switch active (x) and standby (y) AML. This is AML switchover, where x is the active AML switching to standby and y is the standby AML to become active.

UPLD AML x TBL y

Upload parameter table 1 to 4 from AML x (MSDL only).

The MSDL AML maintenance error log table, is uploaded from the MSDL card and is displayed on the TTY screen.

The parameter tables are:

TBL1 = AML maintenance error log table

TBL2 = AML downloaded parameter table

TBL3 = AML protocol error log table

TBL4 = AML traffic table

LD 48

MSDL Requirement: The MSDL card must be enabled. The AML layer two must be enabled.

Example: ENL MSDL x followed by ENL AML x LYR2 must have been executed at an earlier time.

Action: MSDL AML table is uploaded and is displayed on the TTY screen.

This command is not available for the ESDI card.

LD 49—New Flexible Code Restriction and Incoming Digit Conversion

Overlay program 49 allows the building, changing, deleting, moving, and printing of code restriction trees and the cancellation of all New Flexible Code Restriction (NFCR) data.

Overlay program 49 also allows the building, changing, deleting, moving, and printing of Incoming DID Digit Conversion (IDC) data.

Prompts and responses

Prompt	Response	Comment
REQ	aaa	Request
TYPE	aaa	Type of data block (aaa = FCR or IDC)
FROM	0-99 0-254	Source customer and tree number
TO	0-99 0-254	Destination customer and tree number
CUST	xx	Customer number
DCNO	0-254	Digit Conversion tree Number
IDGT	0-9999 0-9999	Incoming Digits
CRNO	(0)-254	Code Restriction tree Number
INIT	aaaa	Initial (aaaa = ALLOW or DENY)
- ALLOW	xxxx	Allow
- - UPDT	(YES) NO	Update Tree
- DENY	xxxx	Deny
- - UPDT	(YES) NO	Update Tree
FRCE	(NO) YES	Force
BYPS	xxxx	Bypass
- UPDT	(YES) NO	Update Tree

Alphabetical list of prompts

Prompt	Response	Comment
ALLOW	xxxx xxxx y...y	Allow (Digit sequence to be allowed unconditionally) Prompted when INIT = DENY. Digit sequence to be conditionally allowed and maximum number of digits that can follow A maximum of 50 digits may be analyzed. Enter <cr> to end ALLOW prompt.
BYPS	xxxx	Bypass (Digit sequence to be bypassed) A maximum of 50 digits may be analyzed. Enter <cr> to end EYPS prompt.
CRNO	(0)-254	Code Restriction tree Number (NFCR tree number) The maximum number of trees allowed for a customer is defined by prompt MAXT in LD 15.
CUST	xx <cr>	Customer number For all customers Prompted when REQ = PRT.
DCNO	0-254	Digit Conversion tree Number (IDC tree number)
DENY	xxxx	Deny (Digit sequence to be denied) A maximum of 50 digits may be analyzed. Prompted when INIT = ALLOW.
FRCE	(NO) YES	Force the storage or release of data. If an entry for ALLOW, DENY or BYPS conflicts with existing data, FRCE is prompted. For example, ALLOW = 7 and the existing ALLOW = 7000. In this case enter "NO" to ignore the data, or "YES" to accept the change. A modification of this type may result in the loss of portions of the tree. If REQ = RLS and FRCE = YES, then all the customer's NFCR data is deleted. Prompt NFCR in LD 15 must be set to NO first.
FROM	0-99 0-254	Source customer and tree number

LD 49

Prompt	Response	Comment
IDGT	0-9999 0-9999	Incoming Digits (DN or range of DNs to be converted) The external DNs to be converted is output and the users enter the internal DN. For example, to convert the external DN 3440 to 510, enter: Prompt: Response IDGT: 3440 3440: 510 To convert the external DNs in the range 3440 to 3465, enter: Prompt: Response IDGT: 3440 3465 3440: 444 3441: 445 . . 3465: 469 This is not a prompt. This is the DID directory number which delineates the following prompt.
INIT	ALLOW DENY	Initial To specify digit strings to be denied To specify digit strings to be allowed Entering DNs may be affected by the Outpulsing feature for Japan.
REQ		Request
	CHG END MOV NEW OUT PRT RLS RPL	Change an existing data block Exit Overlay program Move existing data block to a new customer and/or NFCR tree data block Create a new data block Remove a specified NFCR tree data block Print NFCR tree data block Release all NFCR data blocks for a specified customer Replace data in the specified NFCR tree data block with new data
TO	0-99 0-254	Destination customer and tree number

Prompt	Response	Comment
TYPE	FCR IDC	Type of data block NFCR data block Incoming Digit Conversion data block
UPDT	(YES) NO	Update Tree Data is correct and can update the NFCR tree.

LD 50—Call Park and Modular Telephone Relocation

Overlay program 50 allows the implementation and administration of the Call Park and Meridian Modular Telephone Relocation features.

Prompts and responses

Call Park data

Prompt	Response	Comment
REQ	aaa	Request
TYPE	CPK	Type of data block = CPK (Call Park)
CUST	xx	Customer number associated with this function
BLOC	1-5	Call Park block number
CPTM	30-(45)-240	Call Park Timer (in seconds)
RECA	(NO) YES	Recall parked call to attendant
SPDN	(0)-50 xxxx	Number of contiguous system park DNs and first DN
MURT	0-511	Music Route

Meridian Modular Telephone ID change during relocation

The serial number, NT code, color code or release information stored in a Meridian Modular Telephone may be changed during the relocation sequence. This can only be done after the set has “relocated out” and before it is “relocated in” to the new location. An application of this occurs when the terminal is being replaced with one of the same type and requires the same key configuration.

See Set Relocation Data in LD 21, and IDU: Print set ID command in LD 32.

Prompt	Response	Comment
REQ	aaa	Request = CHG or OUT
TYPE	MTRT	Type of data block = MTRT (Meridian Modular Telephone Relocation Table)
TN	I s c u	Terminal Number
SER	xxxxxx	Serial number
NTCD	xxxxxxxx	NT (product) Code
COLR	xx	Color
RLS	xx	Release

Alphabetical list of prompts

Prompt	Response	Comment
BLOC	1-5	Call Park block number Where:1-5 allows the system administrator to define the subsequent prompts. After subsequent prompts have been defined, the administrator is returned to the BLOC prompt until a carriage return (<cr>) is entered. The Primary Call Data Block (block 1) must be defined before any SecondaryCall Park Blocks (2-5) can be added.
	ALL <cr>	Enter ALL when REQ = OUT to remove all Call Park Blocks Enter <cr> to return to the REQ prompt. BLOC is prompted if CPRKNET package 306 is equipped.
COLR	xx	Color of Meridian Modular Telephone. The color codes are: • 03 is black • 35 is chameleon ash • 93 is dolphin
CPTM	30-(45)-240 30-(45)-480	Call Park Timer (in seconds) Call Park recall time (in seconds) if CPRK package 33 is equipped The amount of time a call is held in the parked state before recalling the parking set or the attendant.
CUST	xx	Customer number associated with this function as defined in LD 15
MURT	0-511 X	Music Route number for parked calls Remove existing music route.
NTCD	xxxxxxxx	New NT (product) Code of Meridian Modular Telephone
RECA	(NO) YES	Recall Attendant Unanswered parked calls recall the parking set Unanswered parked calls recall the attendant
REQ	CHG END NEW OUT PRT	Request Change existing data block Exit Overlay program. Create a new Call Park data block (not applicable if TYPE = MTRT) Remove data block Print call park data block (not applicable if TYPE = MTRT)

LD 50

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Prompt	Response	Comment
RLS	xx	New Release of Meridian Modular Telephone
SER	xxxxxx	New Serial Number of Meridian Modular Telephone
SPDN	xx yyyy	System Park DNs Number of contiguous System Park DNs, and first DN Up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150. Where: xx = # of contiguous System Park DNs. The range is: • (0)-100 yyyy = First Call Park DN
TN	I s c u	Terminal Number Old Terminal Number of set in relocation table
TYPE	CPK MTRT	Type of data block Call Park data block Meridian Modular Telephone Relocation Table

LD 56—Flexible Tones and Cadences

Flexible Tones and Cadences (FTC) is an optional feature which is used to customize the tones provided to telephone users. FTC is primarily intended for international markets where tones which are different from the North American defaults are required.

Overlay program 56 allows the implementation and administration of tone and ringing parameters for one or more customers. If the FTC feature (package 125) is not equipped, North American tones and cadences are used.

An FTC table number can be entered for each trunk route at prompt TTBL in LD 16. Table 0 is the default for all trunk routes and contains the defaults for North America.

What are tones and cadences?

Tones are used to provide call status to telephone users. A tone is defined by both the frequency and volume of the sound.

Tones are provided in on and off phases. One or more cycles of on/off cycles make up a tone's cadence. For example, the default cadence for normal North American ringing is 2 seconds on, 4 seconds off, 2 seconds on, 4 seconds off, and so on.

Flexible Tone and Cadence (FTC) Tables

FTC tables define the tones and cadences used for various calling features. Up to 31 FTC tables can be created. Each table can be associated with one or more trunk routes by entering the table number in response to prompt TTBL in LD 16.

Master Cadence Table (MCAD)

The Master Cadence Table (MCAD) defines cadences that are controlled by software. These are used for single line sets (500/2500) and digital sets.

The MCAD can have 256 entries (0-255). Each entry can have up to 10 on/off phases each. Entry 0 is reserved for continuous tone and cannot be changed. Entries 1-15 are reserved for ringing cadences.

Most of the software cadences are continuously repetitive unless it is specified that the tone should end after the last phase. There are four exceptions to this rule: prompts ACBT, AOBT, INTU and OVRD cadences repeat the last 8 phases. This allows a special initial tone burst to be defined. To have the first cycle repeat, it must be defined as both the first and last cycle.

A cadence is defined at the CDNC prompt by entering the time for each on and off phase. The time depends on the settings for the TMRK prompt in LD17 which defines the software cadence increments as 96 or 128 ms. For each phase, enter the closest multiple of 5 ms equal to the multiple of 96 or 128 ms which gives the a time $\geq$ the time required.

The range for the first phase is 1-9999. The range for the second phase is 0-9999. Once an MCAD entry has been created, it can be changed but not removed.

For example, given LD 17 TMRK is set to 128 ms, and a repeating 2 seconds on, 4 seconds off cadence is required.

- 1 Determine the ON phase (2 seconds = 2000 ms)
 $2000/128 = 15.625 = 16$ (always round up)
 $128 \times 16 = 2048$ ms
multiple of 5 closet to 2048 ms = 2050
Entry for prompt CDNC = $2050/5 = 0410$
- 2 Determine the OFF phase (4 seconds = 4000 ms). By using the same calculation, the entry for prompt CDNC = 0820.
- 3 To define the cadence, respond to the prompts as follows:

REQ NEW, CHG
TYPE MCAD
WCAD 1-255
CDNC 0410 0820

To define the cadence: 2 s on, 4 s off, 4 s on, 2 s off, repeat cycle 1 and 2, enter:

CDNC 0410 0820 0820 0410

To define the cadence: 2 s on, then steady off, enter:

CDNC 0410, or
CDNC 0410 0000

If an odd number of non-zero phases are entered, software ends the tone after the last ON phase. Once a zero phase has been entered, it cannot be followed by non-zero phases. A carriage return at any phase results in zero for the remaining phases.

Once the cadence is defined, it can be entered in response to the CDNC prompt for a given feature. For example, CDNC is output after the Call Waiting tone prompt.

Firmware Cadence Table (FCAD)

The Firmware Cadence Table (FCAD) defines cadences that are controlled by an NT8D17 Conference/TDS/MFS card.

The FCAD can have 256 entries (0-255). Each entry can have up to 10 on/off phases. Entry 0 is reserved for continuous tone and cannot be changed. Entries 1-15 are reserved for ringing cadences. Each phase is in multiples of 5 ms.

FCAD cadences have the following capabilities:

- Each cadence may be defined to end at the “on” phase, the “off” phase, or repeat after a single pass through the defined on/off cycles. Any or all of the five cycles can be repeated.
- Unique tones can be defined for each “on” phase. These tones are permanently held in the Conference/TDS/MFS firmware.

In order to have the same cadences on 500/2500/digital telephones and SL-1 telephones, the MCAD and FCAD entries 0-15 are identical. Changes to MCAD entries 1-15 automatically change FCAD entries 1-15. The FCAD entries 1-15 can only be changed by changing the MCAD entries 1-15.

The Conference/TDS/MFS card must be disabled and then re-enabled to download changed firmware cadences.

Examples of creating firmware cadences:

1 For a cadence of 2 s on, 4 s off, repeat:

```
REQ NEW, CHG, PRT
TYPE FCAD
WCAD 1-255
CDNC 0410 0820
```

END REPT

CYCS 1 (on/off cycles to be repeated)

WTON NO (use default tone for this cadence)

2 For a cadence of 2 s on, 4 s off, 3 s on, 5 s off, repeat:

```
REQ NEW, CHG, PRT
TYPE FCAD
WCAD 1-255
CDNC 0410 0820 0614 0998
```

END REPT

CYCS 1 2 (on/off cycles to be repeated)

WTON NO (use default tone for this cadence)

3 For a cadence of:

0.1 s on at 950 Hz, 19 dB below overload A-law, 0.1 off

0.1 s on at 1400 Hz, 20 dB below overload A-law, 0.1 off

0.1 s on at 1800 Hz, 20 dB below overload A-law, steady off

```
REQ NEW, CHG, PRT
```

```
TYPE FCAD
```

```
WCAD 1-255
```

```
CDNC 0020 0020 0020 0020 0020
```

END OFF

WTON YES (define tones for this cadence)

TONES 134 135 136 (See NT8D17 Conference/TDS tone table)

TDS and NT8D17 Conference/TDS/MFS cards

There are two types of cards providing tones and cadences:

- Tone and Digit Switch (TDS) cards
- NT8D17 Conference, TDS and Multi-Frequency (MF) Sender card

There are a variety of TDS cards. Each card provides a different set of tones and cadences. When a TDS card is used for SL-1 sets, each tone and cadence is identified by a hexadecimal code. The decimal equivalents for these hex codes are entered at the TDSH prompt for each calling feature.

Refer to the the *Flexible Tones and Cadences* NTP for the appropriate codes.

When the NT8D17 Conference/TDS/MFS cards are used, the tones and cadences are defined by the following prompts:

- XCAD = 0-255 - entry in the Firmware Cadence Table (FCAD)
- XTON = 0-255 - tone stored in the card firmware
- CDNC = 0-255 - entry in Master Cadence Table (MCAD)

The ringing cadences for all telephones use the Master Cadence Table (MCAD). MCAD entries 1-15 are downloaded to the Peripheral Controller to provide ringing.

Time interval for Call Forward

For Call Forward No Answer (CFNA), the time interval before a call is forwarded is measured by the time interval for one ring cycle (defined at NCAD prompt) times the number of ring cycles (defined at CFNA prompt in LD 15).

All other types of ringing forward a call after this same time interval regardless of cadence. For example, those with a faster cadence will forward after more rings, those with a slower cadence after fewer rings.

Installing FTC

These steps outline the process to install the FTC feature and change the default tones and cadences for one or more calling features.

To assist in fault clearing, it is recommended that you keep a record of all changes.

- 1 Load Overlay 56
- 2 Define new MCAD cadences
- 3 Define new FCAD tones and cadences
- 4 Create one or more FTC tables (one for each trunk route requiring different tones and cadences)
- 5 Define the non-default tones and cadences for each FTC table
- 6 Enter the FTC table number for each trunk route (LD 16 prompt TTBL)
- 7 If a Conference/TDS/MFS card is equipped, then follow these steps:
 - a set options in LD 97
 - b initialize the system (INIT)
 - c disable and enable each Conf/TDS/MFS card (LD 34)
 - d disable and enable each Controller (LD 32)

Note 1: The Master Cadence Table (MCAD) defines cadences that are controlled by software. These are used for single line sets (500/2500) and digital sets.

MCAD can have up to 256 entries (0-255). Each entry can have up to 10 on/off phases. Entry 0 is reserved for continuous tone and cannot be changed. Entries are reserved for ringing cadences.

To define an MCAD cadence, enter the time for each on and off phase. Phases are in 5 ms increments. For example, enter 200 to have a phase last 1 second ($200 \times 5 \text{ ms} = 1000 \text{ ms} = 1 \text{ second}$).

The range for the first phase is 1-9999. The range for the second phase is 0-9999. Once an MCAD entry has been created, it can be changed but not removed.

Note 2: Prompts with the response `i bb c tt` are only prompted for systems equipped with Tone and Digit cards.

- `i` = internal (0) or external (1) source
- `bb` = burst
- `cc` = cadence
- `tt` = frequency/level

Prompts with the response `i bb c tt` define the Internal/External source, burst, cadence and frequency/level respectively. Enter the decimal equivalent (0-15) of the TDS Hex code (refer to 553-2711-180).

The first field is usually 0. If an external source is used the entry is 1 and the fourth field is 0-7 for the specified channel.

Note 3: The Firmware Cadence Table (FCAD) defines cadences that are controlled by the NT8D17 Conference /TDS/MFS card. These are used for SL-1 sets.

The FCAD can have up to 256 entries (0-255). Each entry can have up to 10 on-off phases. Entry 0 is reserved for continuous tone and cannot be changed.

FCAD cadences have the following capabilities:

- each cadence may be defined to end on the ON phase, OFF phase or repeat after a single pass through all defined on-off cycles. Any or all of the five on-off cycles can be repeated.
- a unique tone can be defined for each on phase. These tones are permanently held in the Conference/TDS/MFS firmware.

In order to have the same cadences for 500/2500 Digital and SL-1 sets, the MCAD and FCAD entries 0 through 15 are identical. Changes to MCAD entries 1 through 15 automatically change MCAD entries 1 through 15. FCAD entries 1 through 15 cannot be changed without changing the MCAD entries.

Note 4: The cadences for Software Controlled Cadence Tones AOBT (Agent Observe Tone), INTU (Intrusion tone) and OVRD (Override tone) do not repeat in the same manner as the other tones. All other tones repeat all on-off cycles from the first up to the fifth if all ten on and off times are programmed. However, these tones reserve cycle 1 for special use, providing a tone burst of a different length if desired, to emphasize the initial iteration of the tone cycle.

Note 5: A cycle of 200 3200 50 3200 will have a 200 millisecond tone followed by 3.2 seconds of silence. After this initial burst, the tone will repeat in a 50 millisecond on, 3.2 seconds off pattern as long as the time remains valid. However, if the pattern is intended to not have an initial burst, the first two entries must be repeated as the last two entries to obtain the correct sequence.

As an example, if the desired tone is repeating sequence of 50 ms on, 100 ms off, 100 ms on, 50 ms off, 50 ms on, 3500 ms off, the entry must be as follows:

50 100 100 50 50 3500 50 100

Prompts and responses

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FCAD: Firmware Cadence data block

Prompt	Response	Comment
REQ	aaa	Request
TYPE	FCAD	Type of data block = FCAD (Firmware Cadence)
WCAD	0-225	Cadence Number (0 is reserved for continuous tone and cannot be changed)
CDNC	xxxx xxxx ... xxxx	Cadence
END	a...a	End treatment for cadence (a...a = REPT, ON, or OFF)
- CYCS	x x x x	Cycles
- WTON	(NO) YES	Define Tones associated with the cadence
- - TONES	ttt ttt ...	NT8D17 tones (0-255) to be used with each phase of the cadence

FTC: Flexible Tones and Cadences data block

An FTC table number can be entered for each trunk route at prompt TTBL in LD16. Table 0 is the default for all trunk routes and contains the defaults for North America.

Prompt	Response	Comment
REQ	aaa	Request
TYPE	FTC	Type of data block = FTC (Flexible Tones and Cadences)
TABL	0-31	FTC Table number
USER	(NO) YES	Print users of this table and tone table values (tone table value only)
DFLT	0-31	Default to existing FTC tone table
RING	(NO) YES	Change the ringing feature definitions
- NCAD	(1)-255	Normal Cadence
- NBCS		Normal BCS (SL-1 set) ringing
- - TDSH	i bb c tt	TDS Hex (Default is 0032)
- - XTON	0-(2)-255	XCT Tone code
- DCAD	0-(2)-255	Distinctive Cadence
- DBCS		Distinctive BCS (SL-1 set) ringing
- - TDSH	i bb c tt	TDS Hex (Default is 0082)
- - XTON	0-(2)-255	XCT Tone code
- ICAD	0-(5)-255	Intercom Cadence
- IBCS		Intercom ringing for BCS (SL-1)sets
- - TDSH	i bb c tt	TDS Hex (Default is 0012)
- - XTON	0-(2)-255	XCT Tone code
- RCAD	0-(1)-255	Recall Cadence
- RBCS		Recall for BCS (SL-1) sets
- - TDSH	i bb c tt	TDS Hex (Default is 0032)
- - XTON	0-(2)-255	XCT Tone code

- GCAD	0-(1)-255	Group Call Cadence
- GBCS		Group Call for BCS (SL-1) sets
-- TDSH	i bb c tt	TDS Hex (Default is 0082)
-- XTON	0-(2)-255	XCT Tone code
- HCAD	0-(1)-255	Held call reminder Cadence
- HBCS		Held call reminder ringing for BCS (SL-1) sets
-- TDSH	i bb c tt	TDS Hex(Default is 0082)
-- XTON	0-(2)-255	XCT Tone code
- PCAD	0-255	Recall or Misoperation Cadence
- PBCS		Recall or Misoperation ringing for BCS
-- TDSH	i bb c tt	TDS Hex (Default is 0032)
-- XTON	0-(4)-255	XCT Tone code
HCCT	(NO) YES	Hardware Controlled Cadences and Tones
- DIAL		Dial tone
- EEST		End-to-End Signaling Feedback Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0004)
-- XTON	0-(4)-255	XCT Tone code
		For EEST, this value is set to 0 no matter what is entered.
-- XCAD	(0)-55	XCT Cadence number (FCAD cadence number)
- SPCL		Special dial tone
-- TDSH	0 00 0 tt	TDS Hex (Default is 0004)
-- XTON	0-(4)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number (FCAD Cadence number)
- CDT		Control Dial Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0004)
-- XTON	0-(4)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
- CFDT		Call Forward Dial Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0004)

-- XTON	0-(4)-255	XCT Tone code
-- XCAD	(0)-255	XCT
- MWDT		Message Waiting Dial Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0024)
-- XTON	0-(4)-255	XCT Tone code
-- XCAD	0-(17)-255	XCT Cadence number
- CFMW		Call Forward Message Waiting tone
-- TDSH	i bb c tt	TDS Hex (Default is 0024)
-- XTON	0-(4)-255	XCT Tone code
-- XCAD	0-(17)-255	XCT Cadence number
- BUSY		Busy tone
-- TDSH	i bb c tt	TDS Hex (Default is 0017)
-- XTON	0-(7)-255	XCT Tone code
-- XCAD	0-(16)-255	XCT Cadence number
- RGBK		Ringback tone
-- TDSH	i bb c tt	TDS Hex (Default is 0035)
-- XTON	0-(5)-255	XCT Tone code
-- XCAD	0-(1)-255	XCT Cadence number
- PREM		Preemption tone
-- TDSH	i bb c tt	TDS Hex (Default is 0006)
-- XTON	0-(6)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
- PRBK		Precedence Ringback tone
-- TDSH	i bb c tt	TDS Hex (Default is 0008D)
-- XTON	0-(11)-255	XCT Tone code
-- XCAD	0-(2)-255	XCT Cadence number
- ARBK		ACD RGA (Ring Again) Ringback tone
-- TDSH	i bb c tt	TDS Hex (Default is 0008D)
-- XTON	0-(11)-255	XCT Tone code

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-- XCAD	0-(2)-255	XCT Cadence number
- FFCT		Flexible Feature Code Confirmation Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0004)
-- XTON	0-(4)-255	XCT tone code
-- XCAD	(0)-255	XCT Cadence number
- LIMT		Log In Mode Tone for 500/2500 ACD sets
-- TDSH	i bb c tt	TDS Hex (Internal/External, burst, cadence and tone)
-- XTON	0-255	XCT Tone code
-- XCAD	0-255	XCT Cadence number
- NRMT		Not Ready (NRDY) Mode Tone for ACD sets
-- TDSH	i bb c tt	TDS Hex (Internal/External, burst, cadence and tone)
-- XTON	0-255	XCT Tone code
-- XCAD	0-255	XCT Cadence number
- AWUT		Automatic Wake Up special error Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0027)
-- XTON	0-(4)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
- OVFL		Overflow tone
-- TDSH	i bb c tt	TDS Hex (Default is 0027)
-- XTON	0-(7)-255	XCT Tone code
-- XCAD	0-(17)-255	XCT Cadence number
- TEST		Test tone
-- TDSH	0 0 0 tt	TDS Hex (Default is 0008)
-- XTON	0-(8)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
- ERWT		Expensive Route Warning Tone
-- TDSH	0 0 0 tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number

- PCWT		Precedence Call Waiting Tone
- - TDSH	0 0 0 tt	TDS Hex (Default is 0003)
- - XTON	0-(3)-255	XCT Tone code
- - XCAD	(0)-255	XCT Cadence number (FCAD Cadence number)
- ACFT		ACD Call Force Tone
- - TDSH	0 0 0 tt	TDS Hex (Default is 0003)
- - XTON	0-(3)-255	XCT Tone code
- - XCAD	(0)-255	XCT Cadence number
- TLP		Tone to Last Party
- - TDSH	i bb c tt	TDS Hex (Default is 0003)
- - XTON	(0)-255	XCT Tone code
- - XCAD	(0)-255	XCT Cadence number
- TLPT	(0)-30	Tone to Last Party Timer in seconds. No tone = 0
- PATI		Patience tone Multi-Party Operations
- - TDSH	i bb c tt	TDS Hex (Default is 0000)
- - XTON	(0)-255	XCT Tone code
- - XCAD	(0)-255	XCT Cadence number
CAB	(NO) YES	M911 Call Abandon on Answer tone
- TDSH	i bb cc tt	TDS external, burst, cadence and tone
- XTON	0-255	NT8D17 TDS Tone code
- XCAD	0-255	NT8D17 Cadence code for FCAD
CAST	(NO) YES	Centralized Attendant Service Tones
- LDN		Listed Directory Number tone
- - TDSH	i bb c tt	TDS Hex (Default is 0346)
- - XTON	(0)-255	XCT Tone code
- - XCAD	0-(24)-255	XCT Cadence number
- - CDNC	0-(16)-255	MCAD software Cadence number

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- DI0		Dial 0 Recall tone
-- TDSH	i bb c tt	TDS Hex (Default is 0283)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	0-(22)-255	XCT Cadence number
-- CDNC	0-(16)-255	MCAD software Cadence number
- HLDC		Hold Confirmation tone
-- TDSH	i bb c tt	TDS Hex (Default is 0346)
-- XTON	(0)-255	XCT Tone code
-- XCAD	0-(24)-255	XCT Cadence number
-- CDNC	0-(16)-255	MCAD software Cadence number
- CPNC		Camp-On Confirmation tone
-- TDSH	i bb c tt	TDS Hex (Default is 0243)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	0-(21)-255	XCT Cadence number
-- CDNC	0-(17)-255	MCAD software Cadence number
SCCT	(NO) YES	Software Controlled Cadences and Tones
ILIN		NXCC pending agent Login tone
ILOU		NXCC pending agent Logout tone
- CAMP		Camp-On tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(17)-255	MCAD software cadence number
- AOBT		Agent Observe Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(18)-255	MCAD software cadence number
- INTU		Intrusion tone

-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(19)-255	MCAD software cadence number
- CWT		Call Waiting Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(20)-255	MCAD software cadence number
- OBKT		Observe Blocking Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(17)-255	MCAD software cadence number
- OVRD		Override tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(18)-255	MCAD software cadence number
- OHQ		Off-Hook Queuing tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(3)-255	MCAD software cadence number
- SRT		Set Relocation Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(22)-255	MCAD software cadence number
- TMTAT		Telephone Messaging Alert Tone

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-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(22)-255	MCAD software cadence number

- TMOT		Telephone Messaging OK Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(23)-255	MCAD software cadence number

- TSUT		Telephone Status Update Tone
-- TDSH	i bb c tt	TDS Hex (Default is 0003)
-- XTON	0-(3)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
-- CDNC	0-(23)-255	MCAD software cadence number

SRC	(NO) YES	Source
-----	----------	--------

- SRC1		Source tone 1
-- TDSH	i bb c tt	TDS Hex (Default is 0000)
-- XTON	(0)-255	XCT Tone code
-- XCAD	(0)-255	XCT Cadence number
- SRC2		Source tone 2
- SRC3		Source tone 3
- SRC4		Source tone 4
- SRC5		Source tone 5
- SRC6		Source tone 6
- SRC7		Source tone 7
- SRC8		Source tone 8

PULS	(NO) YES	Pulse timers are to be changed
------	----------	--------------------------------

- P10	4 (8)	Codes for make/break ratio for 10 pps
- ID1	256-(768)-1024	Inter-Digit 1
- ID2	256-(512)-1024	Inter-Digit 2

- IDD	256-1024	Inter-Digit DTMF
- IDE	256-(384)	EOS interdigital pause in milliseconds

MCAD: Master cadence data block

Prompt	Response	Comment
REQ	aaa	Request
TYPE	MCAD	Type of data block = MCAD (Master cadence)
WACD	0-225	Cadence Number (0 is reserved for continuous tone and cannot be changed)
CDNC	xxxx xxxx ... xxxx	Cadence

RART: Route Access Restriction table data block

Prompt	Response	Comment
REQ	CHG	Request. REQ = NEW or OUT is not accepted for RART.
TYPE	RART	Type of data block = RART (Route Access Restriction table)
CUST	(0)-xx	Customer number
ROUT	(0)-127	Route
ART	1-63	Access Restriction Table

RCDT: Route Category Default Table data block

Prompt	Response	Comment
REQ	CHG	Request. When TYPE = RCDT, you cannot enter NEW or OUT at the REQ prompt.
TYPE	RCDT	Type of data block = RCDT (Route Category Default table)
COT	(0)-63	COT, FEX, WAT. These route types will be assigned the entered ART when the route is created in LD16.
DID	(0)-63	These route types will be assigned the entered ART when the route is created in LD16
TIE	(0)-63	CAA, CAM, CSA, TIE
OTH	(0)-63	Other

TBAR: Trunk Barring data block

Prompt	Response	Comment
REQ	NEW CHG	Request
TYPE	TBAR	Type of data block = TBAR (Trunk Barring)
ART	1-63	Access Restriction Table
DENY	yyy yyy ...	Enter ART number denied to Originating Trunk Connection (OTC)

Print a customer defined route's ART course

Prompt	Response	Comment
REQ	PRT	Request
TYPE	aaa	Type of data block
CUST	(0)-xx	Customer number
ROUT	(0)-127	Route

Default Master Cadence (MCAD) tables

WCAD = DEFAULT MCAD TABLE (Master Cadence Table)

000	CDNC = 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
001	CDNC = 0410 0800 0000 0000 0000 0000 0000 0000 0000 0000
002	CDNC = 0308 0076 0308 0076 0000 0000 0000 0000 0000 0000
003	CDNC = 0205 0000 0000 0000 0000 0000 0000 0000 0000 0000
004	CDNC = 0102 0102 0205 0819 0000 0000 0000 0000 0000 0000
005	CDNC = 0100 0100 0000 0000 0000 0000 0000 0000 0000 0000
016	CDNC = 0128 0000 0000 0000 0000 0000 0000 0000 0000 0000
017	CDNC = 0051 0000 0000 0000 0000 0000 0000 0000 0000 0000
018	CDNC = 0205 3072 0051 3072 0000 0000 0000 0000 0000 0000
019	CDNC = 0205 1229 0051 1229 0000 0000 0000 0000 0000 0000
020	CDNC = 0051 0026 0051 2048 0000 0000 0000 0000 0000 0000
021	CDNC = 0410 0000 0000 0000 0000 0000 0000 0000 0000 0000
022	CDNC = 0102 0000 0000 0000 0000 0000 0000 0000 0000 0000
023	CDNC = 0512 0000 0000 0000 0000 0000 0000 0000 0000 0000

Master Cadence (MCAD) table for Japan

001	CDNC = 0050 0050 0050 0450 0000 0000 0000 0000 0000 0000
002	CDNC = 0200 0400 0000 0000 0000 0000 0000 0000 0000 0000

Default Firmware Cadence (FCAD) tables

WCAD = DEFAULT FCAD TABLE (Firmware Cadence Table)	
000	Cadence number in the Master Cadence table (MCAD) CDNC = 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
001	Cadence number in the Master Cadence table (MCAD) CDNC = 0410 0800 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
002	Cadence number in the Master Cadence table (MCAD) CDNC = 0308 0076 0308 0076 0000 0000 0000 0000 0000 END = REPT CYCS = 1 2 SPCL = NO
003	Cadence number in the Master Cadence table (MCAD) CDNC = 0205 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
004	Cadence number in the Master Cadence table (MCAD) CDNC = 0102 0102 0205 0819 0000 0000 0000 0000 0000 END = REPT CYCS = 1 2 SPCL = NO
005	Cadence number in the Master Cadence table (MCAD) CDNC = 0100 0100 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
(Part 1 of 3)	

WCAD = DEFAULT FCAD TABLE (Firmware Cadence Table)	
016	Cadence number in the Master Cadence table (MCAD) CDNC = 0100 0100 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
017	Cadence number in the Master Cadence table (MCAD) CDNC = 0050 0050 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
018	Cadence number in the Master Cadence table (MCAD) CDNC = 0010 0010 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
019	Cadence number in the Master Cadence table (MCAD) CDNC = 0040 0060 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
020	Cadence number in the Master Cadence table (MCAD) CDNC = 0015 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
021	Cadence number in the Master Cadence table (MCAD) CDNC = 0020 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
022	Cadence number in the Master Cadence table (MCAD) CDNC = 0020 0020 0020 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
(Part 2 of 3)	

WCAD = DEFAULT FCAD TABLE (Firmware Cadence Table)	
023	Cadence number in the Master Cadence table (MCAD) CDNC = 0060 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
024	Cadence number in the Master Cadence table (MCAD) CDNC = 0020 0000 0020 0000 0020 0000 0000 0000 0000 0000 END = OFF SPCL = YES
025	Cadence number in the Master Cadence table (MCAD) CDNC = 0200 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
026	Cadence number in the Master Cadence table (MCAD) CDNC = 0050 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
027	Cadence number in the Master Cadence table (MCAD) CDNC = 0400 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
028	Cadence number in the Master Cadence table (MCAD) CDNC = 0125 0000 0000 0000 0000 0000 0000 0000 0000 0000 END = OFF SPCL = NO
029	Cadence number in the Master Cadence table (MCAD) CDNC = 0030 0070 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
(Part 3 of 3)	

Firmware Cadence (FCAD) table for Japan

WCAD =	DEFAULT FCAD TABLE (Cadence Table for JAPAN TDS)
001	Cadence number in the Master Cadence table (MCAD) CDNC = 0200 0400 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 2 SPCL = NO
002	Cadence number in the Master Cadence table (MCAD) CDNC = 0050 0050 0050 0450 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1 SPCL = NO
017	Cadence number in the Master Cadence table (MCAD) CDNC = 0100 0050 0000 0000 0000 0000 0000 0000 0000 0000 END = REPT CYCS = 1

Alphabetical list of prompts

Prompt	Response	Comment
ACFT		ACD Call Force Tone When defining the hex codes for this tone, only the code for the frequency/level is required as the cadence is provided by software. Enter zero for the other values (e.g., TDSH = 0 0 0 xx, XTON = xxx, XCAD = 000).
AOBT		Agent Observe Tone This cadence repeats the last 8 on/off phases to allow for a special tone burst on the first cycle. For example, a cadence is defined as 3 s on, 3 s off, 1 s on, 3 s off. After the initial burst, the tone repeats in a 1 s on, 3 s off pattern. In order to repeat the initial 3 s burst, it must be entered as the first and last cycle because the first cycle is not repeated. In this case the cadence is defined as: 3 s on, 3 s off, 1 s on, 3 s off, 3 s on 3 s off.
ARBK		ACD RGA (Ring Again) Ringback tone
ART	1-63 <cr>	Access Restriction Table Return to REQ prompt ART remains unchanged Printing of the route category default table occurs
AWUT		Automatic Wake Up special error Tone
BUSY		Busy tone
CAB	(NO) YES	M911 Call Abandon on Answer tone
CAMP		Camp-On tone
CAST	(NO)YES	Centralized Attendant Service Tones Modification to the CAS (Centralized Attendant Service) tone definition. For systems with XCT cards, each feature requires a firmware cadence (XCAD), a software cadence (CNDN) and tone (XTON). Due to the finer resolution of the firmware cadence (5 ms) compared to the software (96/128 ms), you should allow the software cadence to be long enough to cover the full duration of the XCAD.

Prompt	Response	Comment
		For example, to define a cadence of 0.1 s on, 0.1 s off, 0.1 s on, steady off • CDNC0020 0020 0020 0000 • END OFF • SPCL The software cadence is then 0.3 s (600 ms). If the software precision is 128 ms, the software cadence is calculated as follows: • $600 \text{ ms}/128 = 4.6 = 5$ (rounded up) • $128 \times 5 = 640$ Entry to on phase = $640/5 = 0128$, and to define the cadence enter 0128 to prompt CDNC.
CDNC	xxxx xxxx ... xxxx	On-off phases for Cadence (ten on-off cycles) Entries 1 through 15 are reserved for ringing cadences. When defining the cadences in MCAD each phase entry is in 5 millisecond increments. The range for the first phase is 1-9999 increments. The range for the second phase is 0-9999 increments. The default is 0 0 0 0 0 0 0 0. Table shows the default MCAD Tables.
	0-(16)-255	MCAD software cadence number
	0-(17)-255	MCAD software cadence number
	0-(19)-255	MCAD software cadence number (see <i>Note 5</i>)
	0-(18)-255	MCAD software cadence number (see <i>Note 5</i>)
	0-(20)-255	MCAD software cadence number
	0-(3)-255	MCAD software cadence number
	0-(22)-255	MCAD software cadence number
	0-(23)-255	MCAD software cadence number
CDT		Control Dial Tone

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Prompt	Response	Comment
CFDT		Call Forward Dial Tone
CFMW		Call Forward Message Waiting tone
COT	(0)-63	COT, FEX, WAT. These route types will be assigned the entered ART when the route is created in LD 16.
CPNC		Camp-On Confirmation tone
CUST	(0)-xx	Customer number
CWT		Call Waiting Tone
CYCS	x x x x	On-off Cycles (1 to 5) to be repeated. Default is no repeats. Prompted when END = REPT
DBCS		Distinctive BCS (SL-1 set) ringing
DCAD	0-(2)-255	Distinctive Cadence 500/2500 and Digital set ringing MCAD cadence number. (See <i>Notes 1 and 3</i>) It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt DBCS). DCAD is also used for SL-1 sets in systems with XCT cards.
DENY	yyy yyy ... ALL xALL Xyyy Xyyy .. <cr>	Enter ART number denied to Originating Trunk Connection (OTC) Deny all ARTs to OTC All ART numbers are allowed to OTC Enter ART numbers allowed to OTC Return to REQ prompt with no table being stored The ART is removed unless it is used as a default when REQ = OUT. REQ = NEW or OUT is disallowed for RART.
DFLT	0-31 <cr>	Default to existing FTC tone table Create tone table without defaulting Prompted when REQ = NEW
DIAL		Dial tone

Prompt	Response	Comment
DID	(0)-63	These route types will be assigned the entered ART when the route is created in LD 16
EEST		End-to-End Signaling feedback Tone This prompt appears to indicate that the improved EES tone is used. There is actually no cadence. When using the Enhanced Conference/TDS card, the XCAD prompt is not printed, and the cadence is set to 0 no matter what is entered.
END	REPT ON OFF	End treatment for cadence Repeating cycles (defined by the CYCS prompt) End cadence on the “on” phase End cadence on the “off” phase
ERWT		Expensive Route Warning Tone When defining the hex codes for this tone, only the code for the frequency/level is required as the cadence is provided by software. Enter zero for the other values (e.g., TDSH = 0 0 0 xx, XTON = xxx, XCAD = 000).
FFCT		Flexible Feature Code Confirmation Tone This tone allows users of 500/2500 or multi-line telephone sets to receive a confirmation tone after activating/deactivating the following features: • Call Forward activate/deactivate • Ring Again deactivate • Store/erase Stored Number Redial • all Automatic Wake Up codes • Speed Call store • any verification code
GBCS		Group Call ringing for BCS (SL-1) sets
GCAD	0-(1)-255	Group Call Cadence 500/2500 and Digital set Group Call Ringing Cadence MCAD cadence number It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt GBCS). GCAD is also used for SL-1 sets in systems with XCT cards.

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Prompt	Response	Comment
HBCS		Held call ringing for BCS (SL-1) sets
HCAD	0-(1)-255	Held call reminder Cadence 500/2500 and Digital set held call reminder ringing cadence MCAD cadence number It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt HBCS). HCAD is also used for SL-1 sets in systems with XCT cards.
HCCT	(NO) YES	Hardware Controlled Cadences and Tones Modification of the hardware (TDS card) controlled cadence tone definitions allowed. For systems with XCT cards, each feature requires a firmware cadence (XCAD) and tone (XTON). For other TDS cards, the tone and cadence is defined by prompt TDSH.
HLDC		Hold Confirmation tone
IBCS		Intercom ringing for BCS (SL-1)sets Distinctive Dial Intercom ringing for BCS (SL-1) sets
ICAD	0-(5)-255	Intercom Cadence 500/2500 and Digital set Dial Intercom Distinctive ringing MCAD cadence number It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt IBCS). ICAD is also used for SL-1 sets in systems with XCT cards.
ID1	256-(768)-1024	Inter-Digit 1(P10 interdigit pause in milliseconds)
ID2	256-(512)-1024	Interdigit 2 (P20 interdigit pause in milliseconds)
IDD	256-1024	Interdigit DTMF pause in milliseconds Default is 512 if 100 is the response to prompt DTRB in LD 17. Otherwise, the default is 384.
IDE	256 - (384)	EOS interdigital pause in ms. Prompted if DDD package is equipped and PULS = YES.

Prompt	Response	Comment
ILIN		Nortel X Call Center (NXCC) pending agent Login tone
ILOU		Nortel X Call Center (NXCC) pending agent Logout tone
INTU		Intrusion tone This cadence repeats the last 8 on/off phases to allow for a special tone burst on the first cycle. For example, a cadence is defined as 3 s on, 3 s off, 1 s on, 3 s off. After the initial burst, the tone repeats in a 1 s on, 3 s off pattern. In order to repeat the initial 3 s burst, it must be entered as the first and last cycle because the first cycle is not repeated. In this case the cadence is defined as: 3 s on, 3 s off, 1 s on, 3 s off, 3 s on 3 s off.
LDN		Listed Directory Number tone
LIMIT		Log In Mode Tone for 500/2500 ACD sets This is the tone setting for ACD services to 500/2500 agent sets. You must have Flexible Tones and Cadences (FTC) supported for this feature to function properly.
MWDT		Message Waiting Dial Tone
NBCS		Normal BCS (SL-1 set) ringing
NCAD	(1)-255	Normal Cadence 500/2500 and Digital set ringing MCAD cadence number. (<i>Notes 1 and 3</i>) It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt NBCS). NCAD is also used for SL-1 sets in systems with XCT (NT8D17 Conference/TDS) cards.
NRMT		Not Ready (NRDY) Mode Tone for ACD sets This is the tone setting for the NRDY function within ACD services to 500/2500 agent sets. You must have Flexible Tones and Cadences supported for this feature to function properly.
OBKT		Observe Blocking Tone
OHQ		Off-Hook Queuing tone
OTH	(0)-63	Other (ADM, DIC, MDM, PAG, RCD)

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Prompt	Response	Comment
	<cr>	These route types will be assigned the entered ART when the route is created in LD 16. Return to REQ prompt.
OVFL		Overflow tone
OVRD		Override tone This cadence repeats the last 8 on/off phases to allow for a special tone burst on the first cycle. For example, a cadence is defined as 3 s on, 3 s off, 1 s on, 3 s off. After the initial burst, the tone repeats in a 1 s on, 3 s off pattern. In order to repeat the initial 3 s burst, it must be entered as the first and last cycle because the first cycle is not repeated. In this case the cadence is defined as: 3 s on, 3 s off, 1 s on, 3 s off, 3 s on 3 s off.
P10	4 (8)	Codes for make/break ratio for 10 pps. Other make/break ratio (Prompt S10P in LD97) North American make/break ratio (Prompt S10P in LD97) (See also CLS P10 in LD 14)
PATI		Patience tone multi-party operations
PBCS		Recall or Misoperation ringing for BCS (SL-1) sets (default is SL-1 ringing tone TDS code)
PCAD	0-255	Recall or Misoperation Cadence 500/2500 and Digital set Recall or Misoperation ringing cadence MCAD cadence number It is recommended that the cadence used matches the cadence provided for SL-1 sets (prompt PBCS). PCAD is also used for SL-1 sets in systems with XCT cards.
PCWT		Precedence Call Waiting Tone When defining the TDS hex codes for this tone, only the code for the frequency/level is required as the cadence is provided by software. Enter zero for the other values (e.g., 0 0 0 xx).
PRBK		Precedence Ringback tone
PREM		Preemption tone

Prompt	Response	Comment
PULS	(NO) YES	Pulse timers are to be changed
RBCS		Call Park Recall ringing for BCS (SL-1) sets
RCAD	0-(1)-255	Recall Cadence 500/2500 and digital set Call Park recall ringing cadence MCAD cadence number. RCAD is also used for SL-1 sets in systems with XCT cards.
REQ	CHG END NEW OUT PRT	Request Change existing data block Exit Overlay program Add new data block to the system Remove data block Print data block
RGBK		Ringback tone
RING	(NO) YES	Change the Ringing feature definitions For systems with NT8D17 Conference/TDS cards, all telephones share the same ringing cadence. SL-1 telephones require an NT8D17 tone (XTON).
SCCT	(NO) YES	Software Controlled Cadences and Tones Modification of the Software Controlled Cadence Tone definitions allowed
SPCL		Special dial tone Only the code for the frequency/level is required as the cadence is provided by software. Enter 0 for the other values (e.g., TDSH = 0 0 0 xx, XTON = xxx, XCAD = 000).
SRC	(NO) YES	Source tones (SRC1 through SRC8) are required. Eight intercept Source tones can be defined. These tones are entered in LD 15 in response to the various intercept treatment prompts.
SRC1		Source tone 1 Prompts and default values for TDSH, XTON and XCAD are the same for all SRC1 through SRC8 prompts.
SRC2		Source tone 2

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Prompt	Response	Comment
SRC3		Source tone 3
SRC4		Source tone 4
SRC5		Source tone 5
SRC6		Source tone 6
SRC7		Source tone 7
SRC8		Source tone 8
SRT		Set Relocation Tone
TABL	0-31 <cr>	FTC Table number To associate a FTC table with a trunk route, enter the table number in response to prompt TTBL in LD 16. Prints all tables
TDSH	i bb c tt	Hexadecimal code for TDS. Internal/External, burst, cadence and tone (See <i>Note 2</i>) The default value of a TDSH prompt changes according to the tone-type prompt (e.g. NBCS, IBCS, HOWL, etc.) which precedes it.
TEST		Test tone
TIE	(0)-63	CAA, CAM, CSA, TIE These route types will be assigned the entered ART when the route is created in LD16.
TLP		Tone to Last Party
TLPT	(0)-30	Tone to Last Party Timer in seconds. No tone = 0.
TMAT		Telephone Messaging Alert Tone
TMOT		Telephone Messaging OK Tone
TONES	ttt ttt ...	NT8D17 tones (0-255) to be used with each phase of the cadence. Default is no tones (0 0 0 0 0). See "Default Firmware Cadence (FCAD) tables" on page 632.
TSUT		Telephone Status Update Tone

Prompt	Response	Comment
TYPE		Type of data block
	FCAD	Firmware Cadence data block
	FTC	Flexible Tones and Cadences data block
	MCAD	Master Cadence data block (Release 14 and later)
	RART	Route Access Restriction Table data block REQ = NEW or OUT is disallowed for RART.
	RCDT	Route Category Default Table data block REQ = NEW or OUT is disallowed for RCDT.
	TBAR	Trunk Barring data block
USER	(NO) YES	Print Users of this table and tone table values (tone table value only) Prompted when REQ = PRT
WCAD	0-225	Cadence number in the Firmware Cadence table (FCAD) Cadence number 0 is reserved for continuous tone and is not changeable.
WTON	(NO) YES	Define tones associated with the cadence. Prompted for systems equipped with Conference /TDS / MF Sender cards.
XCAD		XCT Cadence number (FCAD cadence number) The default range of a XCAD prompt changes according to the tone-type prompt (e.g. DBCS, HOWL, etc.) which precedes it.
XTON	0-255	XCT Tone code

LD 57—Flexible Feature Codes

Overlay program 57 allows the implementation and administration of the Flexible Feature Codes (FFC) software and hardware.

Up to 100 user access codes may be entered at a time for one or more different codes. After entering 100 user access codes, SCH8891 is output.

If the Directory Number Expansion (DNXP) package 150 is equipped, up to 7 digits are allowed for Flexible Feature Codes. Otherwise, a maximum of 4 digits can be entered.

Prompts and responses

Prompt	Response	Comment
REQ	aaa	Request
TYPE	FFC	Type of data block
CUST	xx	Customer number associated with this function
FFCT	(NO) YES	Flexible Feature Confirmation Tone
CEPT	(NO) YES	Conference European Des Postes Tel defaults
- REP*	0-9	Replacement for the * in the CEPT default codes
ALL	(NO) YES	Remove all Flexible Feature Codes
CODE	aaaa	Specific Flexible Feature Code type
- ADMN	ADMN xxxx	Set-based Administration sequence code Enter Flexible Feature Code
- ASRC	ASRC xxxx	Automatic Set Relocation code Enter Flexible Feature Code
- ATDA	ATDA xxxx	Autodial Activated Enter Flexible Feature Code
- ATDD	ATDD xxxx	Autodial Deactivated code Enter Flexible Feature Code
- AUTH	AUTH xxxx	Authorization code Enter Flexible Feature Code
- AWUA	AWUA xxxx	Automatic Wake Up Activate code Enter Flexible Feature Code
- AWUD	AWUD xxxx	Automatic Wake Up Deactivate code Enter Flexible Feature Code
- AWUV	AWUV xxxx	Automatic Wake Up Verify code Enter Flexible Feature Code
- BNRA	BNRA xxxx	Busy Number Redial code Enter Flexible Feature Code
- BNRD	BNRD xxxx	Busy Number Redial Deactivate code Enter Flexible Feature Code

- CCFA	CCFA xxxx	Customer Call Forward code Enter Flexible Feature Code
- CCFD	CCFD xxxx	Customer Call Forward Deactivate code Enter Flexible Feature Code
- CDRC	CDRC xxxx	CDR Charge Account code Enter Flexible Feature Code
- CFDD	CFDD xxxx	Call forward destination deactivation Enter Flexible Feature Code
- CFWA	CFWA xxxx	Call Forward All Calls Activate code Enter Flexible Feature Code
- CFWD	CFWD xxxx	Call Forward All Calls Deactivate code Enter Flexible Feature Code
- CFWV	CFWV xxxx	Call Forward All Calls Verify code Enter Flexible Feature Code
- COND	COND xxxx	Conference Diagnostics code Enter Flexible Feature Code
- CPAC	CPAC xxxx	Call Park Access Code Enter Flexible Feature Code
- CPP	CPP xxxx	Calling Party Privacy code Enter Flexible Feature Code
- CPRK	CPRK xxxx	Call Park code Enter Flexible Feature Code
- CSHF	CSHF xxxx	Centrex Switchhook Flash code Enter Flexible Feature Code
- CWGA	CWGA xxxx	Call Waiting Activated code Enter Flexible Feature Code
- CWGD	CWGD xxxx	Call Waiting Deactivated code Enter Flexible Feature Code

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- C6DS	C6DS xxxx	Six-Party Conference code Enter Flexible Feature Code
- DEAF	DEAF xxxx	Deactivate Feature code Enter Flexible Feature Code
- DPVS	DPVS xxxx	Data Port Verification code Enter Flexible Feature Code
- ELKA	ELKA xxxx	Electronic Lock Activate code Enter Flexible Feature Code
- ELKD	ELKD xxxx	Electronic Lock Deactivate code Enter Flexible Feature Code
- GRPF	GRPF xxxx	Group Call code Enter Flexible Feature Code
- GRCL	GRCL xxxx	Group Call List number code Enter Flexible Feature Code
- HOLD	HOLD xxxx	Permanent Hold code Enter Flexible Feature Code
- ICFA	ICFA xxxx	Internal Call Forward Activate code Enter Flexible Feature Code
- ICFD	ICFD xxxx	Internal Call Forward Deactivate code Enter Flexible Feature Code
- ICFV	ICFV xxxx	Internal Call Forward Verify code Enter Flexible Feature Code
- INST	INST xxxx	Set based administration Installer code Enter Flexible Feature Code
- IMS	IMS xxxx	Integrated Message System access code Enter Flexible Feature Code
- LILO	LILO xxxx	Log In-Log Out for 500/2500 ACD sets code Enter Flexible Feature Code

- MNTC	MNTC xxxx	Maintenance Access code Enter Flexible Feature Code
- MSBA	MSBA xxxx	Make Set Busy Activated code Enter Flexible Feature Code
- MSBD	MSBD xxxx	Make Set Busy Deactivated code Enter Flexible Feature Code
- MTRC	MTRC xxxx	Malicious Call Trace code Enter Flexible Feature Code
- MWRA	MWRA xxxx	Repeat Multiple Wake Up Activated code Enter Flexible Feature Code
- MWUA	MWUA xxxx	Multiple Wake Up Activated code Enter Flexible Feature Code
- MWUD	MWUD xxxx	Multiple Wake Up Deactivated code Enter Flexible Feature Code
- NRDY	NRDY xxxx	Not Ready Activation/Deactivation for 500/2500 ACD sets code Enter Flexible Feature Code
- OVRD	OVRD xxxx	Override and Priority Override code Enter Flexible Feature Code
- OCBA	OCBA xxxx	Outgoing Call Barring feature code Outgoing Call Barring feature
- OCBD	OCBD xxxx	Outgoing Call Barring Deactivate code Enter Flexible Feature Code
- OCBV	OCBV xxxx	Verify the Outgoing Call Barring feature code Enter Flexible Feature Code
- PUDN	PUDN xxxx	Pick Up DN code Enter Flexible Feature Code
- PUGR	PUGR xxxx	Pick Up Group code Enter Flexible Feature Code

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- PURN	PURN xxxx	Pick Up Ringing Number code Enter Flexible Feature Code
- RCFA	RCFA xxxx	Remote Call Forward Activate code Enter Flexible Feature Code
- RCFD	RCFD xxxx	Remote Call Forward Deactivate code Enter Flexible Feature Code
- RCFV	RCFV xxxx	Remote Call Forward Verify code Enter Flexible Feature Code
- RDLN	RDLN xxxx	Redial Last Number code Enter Flexible Feature Code
- RDNE	RDNE xxxx	Redial Number Erase code Enter Flexible Feature Code
- RDSN	RDSN xxxx	Redial Saved Number code Enter Flexible Feature Code
- RDST	RDST xxxx	Redial Store code Enter Flexible Feature Code
- RGAA	RGAA xxxx	Ring Again Activate code Enter Flexible Feature Code
- RGAD	RGAD xxxx	Ring Again Deactivate code Enter Flexible Feature Code
- RGAV	RGAV xxxx	Ring Again Verify code Enter Flexible Feature Code
- RMST	RMST xxxx	Room Status code Enter Flexible Feature Code
- RPAN	RPAN xxxx	Radio Paging Answer call code Enter Flexible Feature Code
- RPAX	RPAX xxxx	Radio Paging Access code Enter Flexible Feature Code

- SADS	SADS xxxx	SAR Disable code Enter Flexible Feature Code
- SAEN	SAEN xxxx	SAR Enable code Enter Flexible Feature Code
- SALK	SALK xxxx	SAR Lock code Enter Flexible Feature Code
- SAUN	SAUN xxxx	SAR Unlock code Enter Flexible Feature Code
- SCPC	SCPC xxxx	Station Control Password Change code Enter Flexible Feature Code
- SPCC	SPCC xxxx	Speed Call Controller code Enter Flexible Feature Code
- SPCU	SPCU xxxx	Speed Call User code Enter Flexible Feature Code
- SSPU	SSPU xxxx	System Speed Call User code Enter Flexible Feature Code
- TFAS	TFAS xxxx	Trunk Answer From Any Station code Enter Flexible Feature Code
- TRMD	TRMD xxxx	Terminal Diagnostics code Enter Flexible Feature Code
- TRVS	TRVS xxxx	Trunk Verification code Enter Flexible Feature Code
- USER	USER xxxx	Set based administration User code Enter Flexible Feature Code
- USCR	USCR xxxx	User Selectable Call Redirection code Enter Flexible Feature Code
- USTA	USTA xxxx	User Status code Enter Flexible Feature Code

Alphabetical list of prompts

Prompt	Response	Comment
ALL	(NO) YES	Remove all Flexible Feature Codes Prompted when REQ = OUT
ASRC	xxxx	Automatic Set Relocation Code
ATDA	xxxx	Autodial Activated
ATDD	xxxx	Autodial Deactivated
AUTH	xxxx	Authorization code
AWUA	xxxx	Auto Wake Up Activate code
AWUD	xxxx	Auto Wake Up Deactivate code
AWUV	xxxx	Auto Wake Up Verify
BNRA	xxxx	Activate the Busy Number Redial feature
BNRD	xxxx	Deactivate the Busy Number Redial feature
C6DS	xxxx	Six-Party Conference code
CCFA	xxxx	Activate the Customer Call Forward feature
CCFD	xxxx	Deactivate the Customer Call Forward feature
CDRC	xxxx	CDR Charge Account code
CEPT	(NO) YES	Conference European Des Postes Tel defaults are to be used. CEPT is prompted when REQ = NEW. If CEPT = YES, then all CEPT defaults will be set up. The default value for CPP is *67 if Calling Party Privacy (CPP) package 301 is equipped.
CFDD		Call forward destination deactivation code

Prompt	Response	Comment								
CFHO	xxxx	Call Forward/HUNT Override via FFC								
CFWA	xxxx	Call Forward All Calls Activate code								
CFWD	xxxx	Call Forward All Calls Deactivate code								
CFWV	xxxx	Call Forward All Calls Verify code								
CODE	aaaa	Specific Flexible Feature Code (FFC) type. Where: aaa = FFC type to be changed. (e.g., AUTH, CPP, etc.) Two entries are required to change a specific FFC. First enter the mnemonic of the FFC to be changed and then carriage return <cr>. The switch will then prompt the mnemonic just entered. Respond to this second prompt by entering the numeric value desired for that Flexible Feature Code. See example below. The Flexible Feature Code may be up to 4 digits, or up to 7 digits with Directory Number Expansion (DNXP) package (150). CODE is prompted when ALL = NO. Example: to change the Flexible Feature Code for Call Park to 88, respond to CODE as follows: <table><tr><td><u>Prompt</u></td><td><u>Response</u></td></tr><tr><td>CODE</td><td>CPRK <cr></td></tr><tr><td>CPRK</td><td>88 <cr></td></tr><tr><td>CODE</td><td><cr> (No further prompts, return to REQ)</td></tr></table>	<u>Prompt</u>	<u>Response</u>	CODE	CPRK <cr>	CPRK	88 <cr>	CODE	<cr> (No further prompts, return to REQ)
<u>Prompt</u>	<u>Response</u>									
CODE	CPRK <cr>									
CPRK	88 <cr>									
CODE	<cr> (No further prompts, return to REQ)									
	ALL	All feature mnemonics that may have a Flexible Feature Code will be prompted.								
	<cr>	No further prompts, return to REQ.								
COND	xxxx	Conference Diagnostics code								
CPAC	xxxx	Call Park Access Code								
CPP	xxxx	Calling Party Privacy								
CPRK	xxxx	Call Park code								
CSHF	xxxx	Centrex Switchhook Flash code								

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Prompt	Response	Comment
CUST	xx	Customer number associated with this function as defined in LD 15
CWGA	xxxx	Call Waiting Activated
CWGD	xxxx	Call Waiting Deactivated
DEAF	xxxx	Deactivate Feature (deactivates RDLN, RGA, CFW, GHD and SNA codes. Same operation as ATDD, CFWD, MSBD, CWGD and RGAD
DPVS	xxxx	Data port verifications code
ELKA	xxxx	Electronic Lock Activate code
ELKD	xxxx	Electronic Lock Deactivate code
EOVR	xxxx	Enhanced Override (manual Forced Camp-On followed by Priority Override)
FFCT	(NO) YES	Flexible Feature Confirmation Tone This tone allows users of 500/2500 or multi-line telephone sets to receive a confirmation tone after activating/deactivating the following features: • Call Forward activate, deactivate • Ring Again deactivate • Store/erase Stored Number Redial • all Automatic Wake Up codes • Speed Call store • any verification code
GRCL	xxxx	Group Call List number
GRPF	xxxx	Group Call
HOLD	xxxx	Permanent Hold code
ICFA	xxxx	Internal Call Forward Activate code
ICFD	xxxx	Internal Call Forward Deactivate code

Prompt	Response	Comment
ICFV	xxxx	Internal Call Forward Verify code
IMS	xxxx	Integrated Message System Access code
INST	xxxx	Set based administration Installer
LILO	xxxx	Login-Logout for 500/2500 ACD sets Dialing the number programmed here allows an ACD Agent on a 500/2500 telephone set to toggle between Login and Logout. There is no confirmation tone.
MNTC	xxxx	Maintenance Access code
MSBA	xxxx	Make Set Busy Activated.
MSBD	xxxx	Make Set Busy Deactivated.
MTRC	xxxx	Malicious Call Trace code
MWRA	xxxx	Multiple Wake Up Activated Automatic Wake Up (AWU) package 102 must be equipped for the MWU FFC codes to be available.
MWUA	xxxx	Repeat Multiple Wake Up Activated.
MWUD	xxxx	Multiple Wake Up Deactivated
NRDY	xxxx	Not Ready activation/deactivation for 500/2500 ACD sets Dialing the number programmed here allows an ACD Agent on a 500/2500 telephone set to toggle in and out of the Not Ready state like other ACD Agents. There is no confirmation tone returned.
OCBA	xxxx	Activate the Outgoing Call Barring feature
OCBD	xxxx	Deactivate the Outgoing Call Barring feature
OCBV	xxxx	Verify the Outgoing Call Barring feature
OVRD	xxxx	Override and Priority Override

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Prompt	Response	Comment
PUDN	xxxx	Pick Up DN code.
PUGR	xxxx	Pick Up Group code.
PURN	xxxx	Pick Up Ringing Number code.
RCFA	xxxx	Remote Call Forward Activate code.
RCFD	xxxx	Remote Call Forward Deactivate code.
RCFV	xxxx	Remote Call Forward Verify code.
RDLN	xxxx	Redial Last Number code.
RDNE	xxxx	Redial Number Erase code.
RDSN	xxxx	Redial Saved Number code.
RDST	xxxx	Redial Store code.
REP*	0-9	One digit replacement for the * in the CEPT default codes. The CEPT defaults will be defined again with this digit used in place of the “*”. In addition, the trailing # will be omitted. REP* is prompted only when REQ = NEW and CEPT = YES. Use <cr> to create only CEPT defaults. Note that digit replacement is blocked for CPP defaults.
	<cr>	No change to defaults
REQ	CHG END NEW OUT PRT	Request Change existing data. Exit Overlay program. Create a new data block. Remove Data Block. Print Data Block.
RGAA	xxxx	Ring Again Activate code.
RGAD	xxxx	Ring Again Deactivate code.

Prompt	Response	Comment
RGAV	xxxx	Ring Again Verify code.
RMST	xxxx	Room Status code
RPAN	xxxx	Radio Paging Answer call code
RPAX	xxxx	Radio Paging Access code
SADS	xxxx	SAR Enable code
SAEN	xxxx	SAR Lock code
SALK	xxxx	Ring Again Activate code
SAUN	xxxx	SAR Unlock code
SCPC	xxxx	Station Control Password Change code
SPCC	xxxx	Speed Call Controller code
SPCU	xxxx	Speed Call User code
SSPU	xxxx	System Speed Call User code
TFAS	xxxx	Trunk Answer From Any Station code
TRMD	xxxx	Terminal Diagnostics code
TRVS	xxxx	Trunk Verification code
TYPE	FFC	Flexible Feature Codes data block
USCR	xxxx	User Selectable Call Redirection
USER	xxxx	Set based administration User
USTA	xxxx	User Status code

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LD 60—Digital Trunk Interface and Primary Rate Interface Diagnostic

The LD 60 diagnostic program can be run in midnight routines or loaded manually to enter commands.

This program is used to maintain the following on other systems:

- 1.5 Mb/s Digital Trunk Interface (DTI)
- Primary Rate Interface (PRI)

Basic Commands

DTI/PRI commands

ATLP (0), 1	Disable (default) or enable midnight auto loop test
CDSP	Clear maintenance display to 00 or blank
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c
DISI loop	Disable loop when all channels are idle
DISL loop	Disable network and DTI/PRI cards of loop
DLBK loop	Disable remote loop back test per RLBK command
DLBK I ch	Disable remote loop back test per RLBK I ch command
DSCH I ch	Disable channel ch of loop
ENCH loop	Enable all channels on 2.0 Mb/s DTI/PRI
ENCH I ch	Enable channel ch of DTI/PRI loop
ENLL loop	Enable network and DTI/PRI cards of loop
LCNT (loop)	List contents of alarm counters on one or all DTI/PRI loops
LOVF c r	List threshold overflows for customer c (0-99) and route r (0-511)
RCNT	Reset alarm counters of all DTI/PRI loops
RCNT loop	Reset alarm counter of DTI/PRI loop
RMST loop	Perform self-test on loop
RMST I ch	Perform self-test on specified channel (2.0 Mb/s DTI/PRI only)
RLBK loop	Close loop at carrier interface point for testing
RLBK I ch	Close channel ch at carrier interface point
RSET I ch	Reset thresholds for channel ch
SLFT loop	Invoke hardware self-test on loop
SLFT I ch	Invoke partial hardware self-test on channel ch
STAT	Get status of all loops
STAT loop	Get status of DTI/PRI loop
STAT I ch	Get status of channel ch

Clock controller commands

DIS CC x (0)	Disable system clock controller x (0)
DSYL loop	Disable yellow alarm processing for loop
ENCK loop	Enable the clock for loop
ENL CC x (0)	Enable system clock controller x (0)
ENYL loop	Enable yellow alarm processing for loop
SSCK x (0)	Get status of system clock x (0)

Alphabetical list of commands

Command	Description
ATLP (0), 1	Disable (0) or enable (1) daily routine auto loop test. Where: 1 = loop test enable; causes far-end to raise and clear yellow alarm 0 = run the partial loop test; there is no interaction for far-end loop (default value) LD 60 is included in the daily (midnight) routines if defined by LD 17 prompt DROL. ATLP is only run if LD 60 is included in the daily routines. If ATLP = 1, and all 24 channels on the loop are idle, then the DTI/PRI card is disabled and a self-test is performed on each channel. All DTI/PRI cards are tested, one at a time. If a D-channel is on the loop, it is temporarily released and reestablished. If one or more channels are busy, the test is not performed on the loop. If ATLP = 0, then an "AUTO TEST DSDL" message is output and only one channel is tested. The channel is randomly selected by software, it cannot be specified.
CDSP	Clear maintenance display to 00 or blank.
CMIN ALL	Clear minor alarm indication on all attendant consoles.
CMIN c	Clear minor alarm indication on attendant consoles for customer c.
DIS CC x (0,1)	Disable system clock controller 0 or 1. CPU 0 must be idle to disable CC 0. CPU 1 must be idle to disable CC 1. To switch CPUs, use the SPCU command in LD 35.
DISI loop	Disable DTI/PRI loop when all channels are idle. The network and DTI/PRI cards are then disabled and status LEDs are lit. Channel status is set to BSY. Enter END to abort. When the PRI is physically connected to a DCHI card, the D-channels must be disabled first using LD 96.

DISL loop	Disable network and DTI/PRI/DTI2/PRI2 cards of loop. (PRI & PRI2 loops cannot be disabled unless associated D-channel is disabled first using LD 96). Active calls are force disconnected by on-hook simulation. All channels are disabled and status LEDs are lit.
DLBK loop	Disable remote loop back test per RLBK command. Loop remains disabled.
DLBK I ch	Disable remote loop back test per RLBK loop ch command. The channel remains disabled.
DSCH I ch	Disable channel ch of loop I.
DSCK loop	Disables the clock for loop, which does not have to be previously defined as the primary or secondary clock source.
DSYL loop	Disable yellow alarm processing for loop.
ENCH loop	Enable all channels on DTI2 loop.
ENCH I ch	Enable channel ch of loop. For TIE trunks with A+B signaling, the channel is set to the same state as the far-end. The far-end refers to the status of the channels as presented by DTI T1 port. With B-channel signaling, channels are placed into the IDLE state and made available for calls.
ENCK loop	Enables the clock for loop, which must be previously defined as a primary or secondary clock source via service change.
END	Aborts the program.
ENL CC x	Enable system clock controller 0 or 1.
ENLL loop	Enable network and DTI/PRI/DTI2/PRI2 cards of loop. For TIE trunks with A+B signaling, the channels are set to the same status as the far-end; otherwise, the channels are set to idle status. The far-end refers to the status of the channels as presented by DTI T1 port. Status LEDs are deactivated. With B-channel signaling, channels are placed into the IDLE state and made available for calls.

ENYL loop	Enable yellow alarm processing for loop.
EREF	Enables automatic switchover of primary and secondary reference clocks. Also enables recovery to primary or secondary clocks when loops associated with these clocks are automatically enabled.
LCNT (loop)	List contents of alarm counters on one or all of the following cases: Case 1 1.5 Mb/s DTI/PRI The counters are: - BPV = bipolar violation counter - SLIPD = frame slip deletion counter - SLIPR = frame slip repetition count - LOSFA = loss of frame alignment counter - OS_BPV = 24-hr bipolar violation counter a For PRI with D2, D3, or D4 framing format, 24-hr bipolar violation counter b For PRI with Extended Superframe Format, 24-hr Cyclic Redundancy Check (CRC) counter - OS_LOSFA = 24-hr loss of frame alignment counter - OS_YEL = 24-hr yellow alarm counter Case 2 2.0 Mb/S DTI The counters are: - G1 alarms - BPV = bipolar violation counter - FAP = frame alignment threshold counter - SLP = maintenance threshold slip counter - CRC = cyclic redundancy threshold counter - AIS = alarm indication signal - AIS64 = 64 Kb/s alarm indication signal - FAL = loss of frame alignment - MFAL = loss of multiframe alignment - BIT3 = bit 3 error - BIT6 = bit 6 error - CFAS = loss of crc-4 multiframe alignment

Case 3 2.0 Mb/s PRI

The counters are:

BPV = bipolar violation counter
 CRC = cyclic redundancy threshold counter
 FAP = frame alignment threshold counter
 SLP = maintenance threshold slip counter
 AIS = alarm indication signal
 LFAS = loss of frame alignment signal
 LMAS = loss of multiframe alignment signal
 RAI = remote alarm indication
 LOS = loss of signal

LOVF c r	List threshold overflows for customer c (0-99) and route r (0-511). The overflows are set when the resident trunk monitor outputs a diagnostic message. Defined thresholds are HOLD, ILLR, REPT, SEIZ and SVFL (see LD 16).
MREF	Disable switchover of system clocks. Also disables recovery to primary or secondary reference clocks when loops associated with these clocks are automatically enabled.
RCNT (loop)	Reset alarm counters for all or specified loop only. If the DTI loop was disabled due to an error threshold overflow and the DTI may be enabled automatically when the counter is cleared, then before performing any command, such as test, that requires the DTI to be disabled you should: 1. disable the DTI 2. list the counters with the LCNT command 3. reset the counters with the RCNT command 4. do the test commands
RLBK loop	Close loop at carrier interface point for testing. Allows the far-end to perform an external loop back test on the carrier span using the RMST command. This command closes the loop at the carrier interface point of the DTI/PRI. The DTI/PRI loop must be disabled first using the DISI or DISL loop commands.

RLBK l ch	Close channel ch at carrier interface point. Allows the far-end to perform an external loop back test on the carrier span. The loop remains enabled, but closes the specified channel at the carrier interface point of the DTI/PRI. The DTI/PRI channel must be disabled first using the DSCH loop ch command.
RMST loop	Perform remote loop back test on loop. The far-end must be in the remote loop back mode. (RLBK command has been issued at the far-end)
RMST l ch	The far-end channel must be in the remote loop back mode. (RLBK command has been issued at the far-end)
RSET l ch	Reset thresholds for channel ch on loop l.
SLFT loop	Invoke DTI/PRI hardware self-test on loop. This command tests speech path continuity, zero code suppression, remote alarm detection, and A&B bit signaling. The loop must be disabled first using the DISI or DISL loop command.
SLFT l ch	Invoke partial hardware self-test on channel ch. The DTI/PRI channel must be disabled first using the DSCH command.
SSCK x	Get status of system clock 0 or 1. The SSCK command indicates the active controller as well as active primary or secondary reference clock source or free run. Response may be: 1. AUTO SWREF CLK - ENBL = automatic switchover of system clocks enabled 2. AUTO SWREF CLK - DSBL = automatic switchover of system clocks disabled 3. CLOCK ACTIVE = the active controller 4. DSBL = clock disabled 5. ENBL = clock enabled 6. REF CLK ERR = possible faulty cable from CC to DTI/PRI, or faulty Clock Controller 7. SYSTEM CLOCK - FREE RUN, PREF or SREF = clock is in free run mode or tracking to the primary (PREF) or secondary (SREF) reference loop 8. VCXO AGING ERROR = the timing crystal is faulty, replace the clock

STAT Get status of all digital loops. The types of loops are:

1. PRI = Primary Rate Interface
2. PRI2 =2.0 Mb/s Primary Rate Interface
3. DTI = Digital Trunk Interface
4. DTI2 =2.0 Mb/s Digital Trunk Interface
5. DLI = Digital Link Interface
6. JDMI = Japan Digital Multiplex Interface

STAT loop Get status of digital loop. Sample output:

```

AAA TRK LOOP x - BBBB
SERVICE RESTORE: YES/NO
YEL ALM PROCESS: YES/NO
ALARM STATUS: NO ALARM/RED(local) ALARM

```

Where: **AAA** may be :

1. DTI
2. DTI2
3. PRI
4. PRI2
5. TIE
6. DID
7. DTI LINK (DTI link loop = DLI)

Where: **BBBB** may be:

1. DSBL = Hardware of specified digital loop is disabled
2. ENBL = Hardware of specified digital loop is enabled
3. RLBK = Hardware of specified digital loop is in remote loop back mode
4. DISI PENDING = DSI command is in progress
5. TRACKING = system clock is tracked to this loop
6. IDLE = Hardware of specified digital loop is idle
7. SERVER RCVY = server has not recovered status of DTI LINK loop. Channels will not be allocated for call processing until this status is removed by the server
8. BUSY = Hardware of specified digital loop is busy
9. MSBY = Hardware of specified digital loop is in make busy mode

Where: **SERVICE RESTORE** may be:

1. YES = restore service automatically if alarm is removed
2. NO = loop can only be manually enabled

Where: **YEL ALARM PROCESS** may be:

1. YES = yellow alarm processing is enabled
2. NO = yellow alarm processing is disabled

Where: **ALARM STATUS** may be:

1. NO ALARM = no alarm active
2. RED = red (local) alarm active

Action 1:

1. list alarm counters (LCNT command)
2. check for DTA messages
3. go to the fault clearing section

Where:

YELLOW = yellow (remote) alarm active

WAITING = DTI/PRI card is not responding. The card either did not respond to a status check or did not respond when a red alarm was cleared. Go to Action 2.

Action 2:

1. check DTI/PRI status again
2. disable, then enable the DTI/PRI

STATE OF SERVICE:

OOS = out-of-service

NNC = no new call

NNDC = no new data call

MNT = maintenance

When an alarm is present (group 2 error), it is a **REMOTE ALARM**

REMOTE ALARM:

NS = alarm indication signal

RAI = remote alarm indication

LOCAL ALARM:

LOS = loss of signal

LFAS = loss of frame alignment signal

LMAS = loss of multiframe alignment signal

STAT I ch

Get status of channel ch. Status may be:

1. IDLE = channel is enabled and is idle
2. BUSY = channel is enabled and is call processing busy or channel is in a lockout state (far-end is disabled)
3. MBSY = channel is being used for maintenance busy, the D-channel is down, or far-end channel is disabled
4. DSBL = channel is disabled
5. DSBL (SERVER) = channel is being used for server maintenance and is disabled for the duration (1.5 Mb/s DTI digital link interface only)
6. FE MBSY = near end is idle, far-end is maintenance busy
7. FE DSBL = near end is idle, far-end is disabled
8. FE DSBL = far-end B-channel is disabled
9. FE MBSY = far-end B-channel is in maintenance mode
10. UNEQ = channel is not equipped

When the loop is a Phantom loop, it is possible to receive the status messages: TIE IDLE ISPC, TIE BUSY ISPC, or TIE MSBY ISPC. Interpret these system responses as they are interpreted for the command STAT loop. See the section which outlines BBBB alternatives for the STAT loop command on [page 669](#).

SWCK

Switch system clock from active to standby.

The reference clock source remains unchanged.

TRCK aaa

Set clock controller tracking to primary, secondary or free run. Where aaa is:

PCK = track primary clock

SCLK = track secondary clock

FRUN = free run mode

Track primary clock (PCK) or secondary clock (SCLK) as the reference clock or go to free run (FRUN) mode.

LD 61—Message Waiting Lamps Reset

The Message Waiting Lamps Reset (MWL) program can be invoked automatically by the system as part of the daily routines or manually from an input device. It is used to deactivate all active Message Waiting lamps on user stations and reset the associated status in the system.

This program cannot be applied to digital sets.

When LD 61 is loaded manually, 'G' must be entered to initiate the task.

G command

Starts resetting the trouble status on all Message Waiting lamps. The program does not reset lamp status unless all message center sets are out-of-service (i.e., message center is closed and attendants are in Night Service).

Before running this program, all Message Center (MC) telephones must be taken out-of-service by “make telephone busy” and if attendants are set up to handle message calls, they must be in night mode.

LD 61

Page 674 of 848 LD 61—Message Waiting Lamps Reset

LD 73—Digital Trunk Interface

Overlay program 73 allows the implementation and administration of the Digital Trunk Interface (DTI) and Primary Rate Interface (PRI) software and hardware.

Prompts and responses

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Section	Page
Prompts and responses by data block: DDB: Digital data block	page 677

DDB: Digital data block

Prompt	Response	Comment
REQ	aaa	Request (aaa = CHG, END, NEW, OUT, or PRT)
TYPE	DDB	Type of data block = DDB (Digital data block)
CLKN	1,3,5	Clock slot number
- PREF	1,3,5	Primary Reference
TRSH	0-15	Threshold set
RALM	1-(3)-128	Remote (yellow) Alarm clear threshold
BIPC	0-(2)-128	Bipolar violation Count threshold
LFAC	0-(3)-128	Loss of Frame Alignment Counter
BIPV	1-(3)-4 1-(2)-4	Bipolar Violation maintenance and out-of-service threshold
SRTK	1-(5)-24 1-(30)-3600	Slip Rate Tracking mode maintenance
SRNT	1-(15)-1024 1-(3)-1024	Slip Rate Non-Tracking
LFAL	1-(17)-10240	Loss of Frame Alignment maintenance and out-of-service thresholds
SRIM	(1)-127	Slip Rate Improvement Monitoring time in minutes
SRMM	1-(2)-127	Slip Rate Maintenance Maximum

Alphabetical list of prompts

Prompt	Response	Comment
BIPC BIPV	0-(2)-128 1-(3)-4 1-(2)-4	Bipolar violation count threshold Bipolar Violation maintenance and Out-of-Service threshold The BIPV values determine the sensitivity of the loop to errors, where BIPV = 1 is the least tolerant to errors, and BIPV = 4 is the most tolerant. The maintenance threshold must be greater than the out-of-service threshold. The method of bit rate monitoring depends on the loop configuration: 1. For DTI mode: bipolar violation thresholds 2. For PRI mode with D2, D3, or D4 framing format: bipolar violation thresholds 3. For PRI mode with Extended Superframe Format (ESF): Cyclic Redundancy Check (CRC) thresholds
CLKN	1,3,5	Clock slot number
LFAC	0-(3)-128	Loss-of-Frame-Alignment Counter This is the maximum number of times a DTI/PRI loop can be taken out-of-service in 24 hours. If this threshold is reached the DTI/PRI must be restored to service manually. If "0" is entered, there is no limit on number of times that trunks can be taken out and automatically restored to service.
LFAL	1-(17)-10240 1-(511)-10240	Loss-of-Frame-Alignment maintenance and out-of-service thresholds The maintenance threshold must be greater than the out-of-service threshold.

Prompt	Response	Comment
PREF	1,3,5 <cr>	Primary Reference Source loop for clock controller If REQ = NEW and carriage return is entered, then Primary Reference is free-run mode. If REQ = CHG, then Primary Reference is not changed. The loop or card must already be defined in LD 17 (prompt DLOP). Use <cr> for free-running mode. Precede with X to remove
RALM	1-(3)-128	Remote (yellow) Alarm clear threshold This is the number of "remote alarm clear" signals received in 24 hours. If the threshold is reached the DTI/PRI must be restored to service manually.
REQ	CHG END NEW OUT PRT	Request Change existing data block Exit Overlay program Create a new data block Remove data block Print the specified data block
SRIM	(1)-127	Slip Rate Improvement Monitoring time (the amount of time in minutes before returning trunks either to service or to the SRGT state) After the tracking or non-tracking mode frame slippage out-of-service threshold is exceeded, the slip rate is monitored for improvement. If the non-tracking maintenance threshold exceeds SRMM or fewer times in the duration of this timer, then the trunks are returned to service. Otherwise, this timer is reset and monitoring continues.
SRMM	1-(2)-127	Slip Rate Maintenance Maximum Number of times the Slip Rate exceeds the maintenance limit while waiting for Slip Rate improvement during the time window specified at the SRIM prompt.

LD 73

Prompt	Response	Comment
SRNT	1-(15)-1024	1-(3)-1024 Slip Rate Non-Tracking mode maintenance and out-of-service thresholds These are frame slip rate thresholds for the non-tracking mode. The first value is the maintenance threshold in seconds. The second value is the out-of-service threshold in seconds, the amount of time in which 10 slips occur.
SRTK	1-(5)-24	1-(30)-3600 Slip Rate Tracking mode maintenance (in hours) and out-of-service thresholds (per hour) These are frame slip rate thresholds for the tracking mode. The first value is the maintenance threshold or the elapsed time (in hours) between frame slips. The default is 1 slip in 5 hours. The second value is the out-of-service threshold or the number of slips per hour. The default is 30 slips in 1 hour.
TRSH	0-15	Threshold set Enter this number in LD 17 when defining a DTI/PRI loop. Use X0-15 to remove TRSH. Note: The LD 17 DLOP/TRSH associated with this LD 73 TRSH must be removed first. Precede with X to remove.
TYPE	DDB DTI PRI	Type of data block 1.5 Mb/s DTI data block 1.5 Mb/s DTI with International 1.5/ 2.0 Mb/S Gateway (GPRI) package 167 data block 1.5 Mb/s PRI data block with International 1.5/ 2.0 Mb/s Gateway (GPRI) package 167

LD 77—Manual Print

LD 77 is used to print the signals that come from the peripheral packs to the common equipment.

Note: This Overlay is intended for people experienced with the message formats and protocols.

When to use LD 77

LD 77 can be useful in determining which peripheral pack (line or trunk) is causing a system overload in situations in which the CPU cannot narrow the problem to a specific Terminal Number (TN). Once the program is loaded from a tape, the user may request the system to print all the input messages from a specific area of peripheral equipment.

Manual Print can also be used to continuously send frequency combinations by defining the loop and terminal number of the MFE card, busying the channel, setting the read/write bit to write, defining the message and repeatedly sending it. This channel will not be available for regular signaling until the message sending is stopped and the channel is idled.

When a machine is carrying traffic, there will be a large number of valid messages generated from the peripheral equipment. Thus, the program will be most effective for trouble-shooting when:

- there is little system traffic
- message address range is restricted (i.e., looks only at one card)

This program has capabilities which are used by the software designers during development activities. The user is protected from accidental access to these commands (and resulting potential service degradation) as a password is required. This password is not available to customers.

LD 77 Output Format

All numerical input/output is in hexadecimal format. The output is in the following format:

<loop> <shelf> <card> <terminal> <message> <time-stamp>

The loop, shelf and card fields identify the circuit pack generating the message.

Abbreviations for LD 77

The fields are defined as follows:

b = bypass bit value

cb = continuity bit

ch = chip on a given SSD Peripheral Signaling pack

g = group

l s c u = TN: loop, shelf, card, unit

ln = link

loop = network loop

m = module

p = page

ps = Peripheral Signaling pack

sh = Multigroup shelf

ts = time slot

v = desired lamp state; 0 = lit, 1 = dark

x = Multigroup bit

Some four-letter commands can be abbreviated to a one-letter command when entered from a TTY (but not an SL-1 telephone). The one-letter command is shown in parentheses after the four-letter mnemonic (e. g., ARPS (F) l s 32 can be entered as F l s 32).

LD 77 Input Format

All input is in decimal form, except message data which is in hexadecimal form. Space and carriage return are automatically done by the overlay when the expected number of digits are input. Therefore the number of input digits must be strictly entered for each input parameter. The number of letters specified in each parameter field dictate the number of hex or decimal digits that must be entered.

For example:

Enter for TN 1 0 2 0:

001 0 02 00

Enter for TN 156 1 15 30:

156 1 15 30

Basic commands

Only “P” commands can be used on superloops.

ANWK (B) loop ts	Read/write network card memory
ANWS (C) loop ts	Read/write network card memory (short)
ARPM loop 20	Print contents of timeslots in RPC
ARPM loop ts b s c u	Get contents of timeslot ts, loop
ARPS (F) loop ts	Read Remote Peripheral Switch memory
DENL loop	Get the density of loop
DISC	Call disconnect
DFTM (T) s c u	Define unit to receive signaling messages
DLMP 0/1	Turn on/off lamp audit
DMTN	Monitor input and output SSD messages for 1 to 6 TNs
DRTM (N) l s c u	Stop printing messages
IMSG	Send input SSD messages from PE to Meridian 1 CPU
KALL	Call set up without specifying timeslots
KALS	Call set up with specifying timeslots
KILLx	Reset one or all TN being monitored
N	Stop print
P	Print all messages
P III	Print all messages from specified loop III
P III s	Print all messages from specified shelf III s
P III s cc	Print all messages from specified card III s cc
PRTM (P) III s cc uu	Print messages, as specified III s cc uu
WCTS loop	Print the current unit scan of loop
WMBY l s c u	Write the maintenance bit for the given unit to BUSY
WMUB l s c u	Write the maintenance bit for the given unit to NOT BUSY
XMSG	Send output SSD messages from Meridian 1 CPU to PE
XMII, XMIO	Send input/output XMI messages between the CPU and superloops
XRCL loop	Read contents of RPC control register for loop
XRSH loop	Read and print contents of SHEN register for loop
XRST loop	Read and print contents of STATUS register for loop
XTRP loop	Test remote RPC processor for loop
XTLP loop	Test local RPC processor for loop
XWCS loop xxxx	Writes RPC control/SHEN register for loop

Alphabetical list of commands

Command	Description
ANWK (B) loop ts	Read/write network card memory. Access the specified network card memory to read and print one word. The word format is: <cb s c u x ln --> Where: cb = continuity bit, s = shelf, c = card, u = unit, x = multigroup bit and ln = link You can write in new data. To change the values, rekey the word after the dashes, substituting new values where appropriate.
ANWS (C) loop ts	Read/write network card memory (short). Access the specified network card memory (short form) to read and print one word. The multigroup bit and continuity field are not used. The word format is: <s c u ln --> Where: s = shelf, c = card, u = unit and ln = link. You can write in new data. To change the values, rekey the word after the dashes, substituting new values where appropriate.
ARPM loop 20	Prints contents of 32 timeslots in RPC associated with loop (20 hexadecimal = 32 decimal).
ARPM loop ts b s c u	Get contents of timeslot ts, loop. The system prints data in the form "bscu", where b is the current value of the bypass bit in the Remote Peripheral Equipment Controller (RPC) memory (0 or 1) for that shelf, card and unit. The user can enter a new bypass bit for the RPC memory after the dash.

ARPS (F) loop ts

Read Remote Peripheral Switch memory.

Access the specified Remote Peripheral Switch (RPS) memory to read and print one word.

The word format is: <cb s c u -->

Where: cb = continuity bit, s = shelf, c = card and u = unit.

You can write in new data. To change the values, rekey the word after the dashes, substituting new values where appropriate.

DENL loop

Get the density of loop.

DFTM (T) s c u

Define unit to receive signaling messages.

DISC

Call disconnect. Format is:

DISC

TN1 lll s cc uu

TN2 lll s cc uu

This command disconnects the call specified by the TNs. A scan of the connection memory is done prior to disconnecting the call, if no timeslot can be found for the specified TN, nothing is done. TN1 and TN2 are prompted by the program.

DLMP 0/1

Turn on/off lamp audit. Format is:

DLMP 0 = turn on lamp audit

DLMP 1 = turn off lamp audit

DMTN Monitor input and output SSD messages for 1 to 6 TNs. This command is used to monitor all SSD messages for the specified TN. TN is automatically prompted by the program. Up to 6 TNs can be monitored at the same time.

Enter the DLPM and DMTN commands as follows:

DLMP 2

DMTN

TNx lll s cc uu

Where: x = (1-6), TN index

The output format is: OSSD111 TN MSG TIME

Where:

OSSD111 = header

TN = packed TN

MSG = SSD message content

TIME = real time clock before output when work scheduler gets the input message

DRTM (N) l s c u

Stop printing messages from the loop, shelf, card and unit. Only loop and shelf numbers are required.

IMSG

Send input SSD messages from PE to Meridian 1 CPU. This command is used to simulate incoming SSD message from the peripheral equipment. The specified TN must be equipped.

Format is:

IMSG

TN lll s cc uu

NUMBER MESSAGES mm

TIMES TO SEND hhh

MSG DATA xxxx xxxx xxxx xxxx. . .

Where:

mm = number of SSD messages (1-10) to be sent

hhh = number of times (1-999) to simulate the SSD input message

xxxx = SSD message content. Number of message contents depends on input of mm

TN, NUMBER MESSAGES, # TIMES TO SEND, and MSG DATA are prompted by the program.

KALL Call set up without specifying timeslots.

This command is used to set up a simple call (intra or inter-group). The system finds an available timeslot for the specified TNs. The specified TN must be equipped, enabled and idle.

Format is:

```
KALL
TN1 lll s cc uu,
Loop 0 00 CH for Digital Trunk Cards.
TN2 lll s cc uu,
Loop 0 00 CH for Digital Trunk Cards.
TN1 and TN2 are automatically prompted by the program.
```

If AUDIT is running, call(s) are disconnected, and AUD17, AUD18, AUD19, and/or AUD31, AUD32 is printed.

Call setup command simply finds the available timeslots and sets up the connection memory and/or junctor memory. BUG105, BUG330 may be printed if illegal sequences are carried out.

These commands are designed for lab use only, and should be used cautiously in a live switch.

KALS Call set up with specifying timeslots.

This command will set up a call specified by the input TNs and the timeslots if both TNs are equipped, enable and idle. The specified timeslots will be used if they are idle, if the specified timeslot are occupied, then the call will not be set up. See Notes with the KALL command.

Format:

```
KALS
TN1 lll s cc uu,
Loop 0 00 CH for Digital Trunk Cards.
TN2 lll s cc uu,
Loop 0 00 CH for Digital Trunk Cards.
TIMESLOTS ts1 ts2
```

Where:

ts1 = specified timeslot of the TN1
ts2 = specified timeslot of the TN2
TN1, TN2, and TIMESLOTS are prompted by the program.

KILLx	Reset one or all TN being monitored. Where: x = the TN index number (1-6) entered with the DMTN command. Enter 7 to reset all the output monitored TNs.
N	Stop print.
P	Print all messages.
P III	Print all messages from specified loop. Enter the exact number of digits. Example: for loop 4, enter 004
P III s	Print all messages from specified shelf. Enter the exact number of digits. Example: for loop 4, enter 004.
P III s cc	Print all messages from specified card. Enter the exact number of digits. Example: for loop 4, enter 004.
PRTM (P) III s cc uu	Print messages, as specified. Only loop and shelf numbers are required. Enter the exact number of digits. (Example: for loop 4, enter 004.)
WCTS loop	Print the current unit scan of specified loop. Outputs shelf, card and unit.
WMBY I s c u	Write the maintenance bit for the given unit to BUSY.
WMUB I s c u	Write the maintenance bit for the given unit to NOT BUSY.
XMII, XMIO	Send input/output XMI messages between the CPU and superloops. Send input/output XMI messages to the Peripheral Controller (NT8D01) or Network card (NT8D04). Use XMII for input messages from the Network card (NT8D04) to the CPU. Use XMIO for messages from the CPU to the Network. This command is used to simulate input/output XMI message. It may not be useful in LD 77, a similar command is available in resident debugger.

Format:

```
XMII or XMIO
LOOP lll
NUMBER MESSAGES m
# TIMES TO SEND hhh
MSG DATA
CCCC xxxx xxxxxxxx
CCCC xxxx xxxxxxxx
CCCC xxxx xxxxxxxx
```

Where:

lll = Loop number
m = Number of multiple XMI messages (1-6)
hhh = Number of times to send XMI messages (1-999)
cccc = Control word; cccc is defined as follows:

r	ss	applic	type
-	--	-----	-----

Where:

r = one bit msg ready flag, always sets to
ss = two bit sequence status field. ss may be:

- a** B.00 : short message
- b** B.01 : starting a long message (message has 6 or more words of data)
- c** B.10 : continue a long msg
- d** B.11 : end of a long msg

applic = six bit value for msg's intended application. appl may be:

- a** B.000001 : for LD 30
- b** B.000010 : for LD 32
- c** B.000011 : for LD 45
- d** B.000100 : for LD 77
- e** B.000101 : for XPE parameter download
- f** B.000110 : for XNET action request

type = seven bit value of message type
xxxx = message data

XMSG Send output SSD messages from Meridian 1 CPU to PE.
This command is used to send output SSD message to the peripheral equipment TN. The specified loop of the TN must be enabled and responding.

Format:

```
XMSG
TN lll s cc uu,
TN l s c u, for Option 11 only
Loop 0 00 CH for Digital Trunk Cards.
NUMBER MESSAGES mm
# TIMES TO SEND hhh
MSG DATA xxxx xxxx xxxx. . . .
```

Where:

mm = number of SSD messages to be sent (1-10)
 hhh = number of times to output SSD message (1-999)
 xxxx = SSD message content. Number of message contents depends on the value of mm
 TN, NUMBER MESSAGES, # TIMES TO SEND, and MSG DATA are prompted by the program.

XRCL loop Read contents of RPC control register.

XRSH loop Read and print contents of SHEN register.

XRST loop Read and print contents of STATUS register.

XTLP loop Test local RPC processor for loop.

XTRP loop Test remote RPC processor for loop.

XWCS loop xxxx
Writes RPC control/SHEN register for loop with data xxxx in hexadecimal format.

LD 80—Call Trace

LD 80 provides a means of tracing a call by looking at a snap shot of the transient data (such as call register contents) associated with the call. The trace commands operate only when this Overlay is active. If LD 80 is aborted (***), the trace functions stop. Note that when using the enhanced trace commands, the Overlay will not automatically abort (according to the defined time-out period) if calls are being traced.

When a system initialization occurs, all trace commands are removed, and the trace operation is stopped.

For Network Call Trace see NCT messages.

Enhanced Trace Commands require Multi-User Login functionality (package 242) to be enabled in LD 17. The enhanced commands are: DALL, DIST, ENTC, ENTD, GOTR, FITR, and STPT. These commands interact with each other only.

The enhanced trace commands can be disabled through a maintenance telephone by dialing the following: nn + 9913 + x + yy

Where:

- nn = customer SPRE access code
- 9913 = feature code to display for message display control
- x = action code (0 to deactivate)
- yy = message monitor code (02 for enhanced trace messages)

A second dial tone indicate that the command was successful. Overflow tone is heard if the command is entered incorrectly. Once this command has been entered, a user entering FITR from the TTY will receive the period (.) prompt.

When to use LD 80

There are three basic commands:

- TRAT for tracing attendant consoles
- TRAC for tracing by customer + DN
- TRAK for tracing sets and trunks
- TRAD for tracing calls through Computer PBX Interface (CPI), Digital Trunk Interface (DTI), Primary Rate Interface, or Digital Link Interface (DLI) loops.

The TRAC command can be used to print the tone detector TN if a tone detector is used at the time of the call trace.

Auxiliary data related to a call can be printed. The auxiliary data consists of information associated with the NARS/BARS/CDP features, if equipped, and the Ring Again (RGA) feature. This additional data can be retrieved by appending DEV to any of the TRAC commands. Example: TRAC L S C U DEV

Originating and terminating information

The Call Trace originating and terminating party information depends on the types of telephone, console or trunk as shown below.

Single line telephones:

```
ORIG l s c u  cust dn 500
TERM l s c u  cust dn 500
```

Multi-line telephones:

```
ORIG l s c u  key# keytype cust dn settype
TERM l s c u  key# keytype cust dn settype
```

Attendant consoles

```
ORIG l s c u  cust att# lpk#  ATTN consoletype
TERM l s c u  cust att# lpk#  ATTN consoletype
```

Trunks:

```
ORIG l s c u  rtyp RMBR rrr mmm
TERM l s c u  rtyp RMBR rrr mmm
```

Where:

l s c u = TN

consoletype = console type (ATT, 1250, 2250)

cust = customer number

dn = directory number

key# = multi-line telephone key number

keytype = multi-line telephone key type (SCR, MCR, HOT, etc.)

lpk# = console loop key number

rrr mm = trunk route and member number

rtyp = trunk route type (TIE, CO, FX, etc.)

settype = multi-line telephone type (SL1, 2008, 2317, etc.)

Example 1

Trace a call placed to a 500-type set

Configuration: active call from key 0 on an M2008, to 500-type telephone

Customer number: 00

Originator:

telephone type: M2008

TN: 004 00

DN: 5100 on SCR key 0

Terminator:

telephone type: 500

TN: 008 06

DN: 2121

Trace command:

TRAK 4 0 (c u), or

TRAC 0 5100 (customer and DN)

Output:

```
ACTIVE  TN    004  0  00 00
ORIG    04 0  0  00 00      0 SCR 0    5100    2008
TERM    008  0  03 06      0 2121    500
DIAL DN 2121
MAIN PM   ESTD
TALKSLOT ORIG 22      TERM 22
QUEUE NONE
```

Example 2**Trace an outgoing ISDN call**

Configuration: outgoing call from key 0 on an M2616, to 500-type telephone
 Originator:

telephone type: M2616
 TN: 016 00
 DN: 6050 on SCR key 0

Terminator:

Dialed DN: 7873107
 Outgoing PRI TIE trunk: loop 1 channel 16; route 24 member 12

Trace command:

TRAC 0 6050 (customer, DN), or
 TRAC 16 0 2 0 (l s c u)

Output:

```
ACTIVE  TN    016  0  00 00
ORIG     016  0  00 00      0 SCR 0    6050    2317
TERM     001 16      TIE  RMBR  24  12
DIAL DN  7873107
MAIN PM   ESTD
TALKSLOT ORIG 13      TERM 13
QUEUE    NONE
----- ISDN PRA CALL (TERM) -----
CAL REF # = 16
BEARER CAP = VOICE
CALL STATE = 10      ACTIVE
CALLING NO = 4376050
CALLED NO  = 7873107
```

Example 3

Enhanced Trace command output

The enhanced call trace output includes a time stamp that appears on the first line of the output.

The TN or digital trunk prints out only when there has been a change to the call register. The TN or trunk is printed only once.

Sample output:

```
.14:00:02 12/25/1992

KEY 0 MCR MARP ACTIVE TN 001 0 00 01

ORIG 001 00 00 0 SCR MARP 1 5011 SL1

TERM 001 0 00 03 0 MCR MARP 1 5006 SL1

DIAL DN 5006

MAIN_PM ESTD

TALKSLOT ORIG 19 TERM 21

QUEU NONE

KEY 1 TRN IDLE

KEY 2 AO3 IDLE

.
.
.

KEY 8 RND

KEY 9 RLS

.14:00:04 12/25/1992

IDLE TN 001 04
```


Alphabetical list of Call Trace outputs

This section provides definitions of the data output by the various call trace commands.

A time stamp is printed with Call Trace output. The following information is added below the time stamp as necessary.

- A digital telephone with no active call register shows:
IDLE TN c 00 u
 - A locked out telephone or digital trunk shows:
LOCKOUT TN c 00 u (or l ch)
 - A disabled telephone or digital trunk shows:
DSBL TN c 00 u (or l ch)
 - A telephone or digital trunk that is in maintenance busy state shows:
MSBY TN c u (or l ch)
MSBY TN c u (or l ch) MARP shows if the TN is a MARP TN
- 1** ACTIVE — the call/key is active
 - 2** AUX_NARS — Network Automatic Route Selection (NARS) data to follow
 - 3** AUX_PM — auxiliary progress mark may be any of the following depending on the MAIN_PM:
 - a** ABSORBING = performing digit manipulation on the call
 - b** AWAIT ANI = waiting for Automatic Number Identification information
 - c** AWAITREPLY = CPU is waiting for a response during a dial sequence
 - d** BSYG = busy tone to originator
 - e** CDR-CALLRECORD = CPU is outputting a CDR record
 - f** CDR-TIMING = CPU is computing a CDR record
 - g** COMPLETE = dialing is complete
 - h** DNTRANS = DN translation to TN in progress

- i** FAREND-OFF = Validating farend answer signal
- j** NARS = call is a network call
- k** NOOUTPULS = outpulsing complete, originator receiving ringback
- l** OUTPULSING = outpulsing digits related to the call
- m** OVLF = resources not available, returning overflow to originator
- n** PAUSING = timed pause in a trunk call dialing sequence
- o** SPEEDCALL = performing speed call
- p** TEMPPATH = software timing, occurs when outpulsing digits on trunks
- q** TOLLCHECK = checking access restrictions for the call
- r** USCR = User Selectable Call Redirection programming, receiving dial tone
- s** USCR_DIAL = USCR programming

- 4** AUX_RGAT_PM — Ring Again over trunk information
- 5** BEARER CAP — bearer capability, such as voice, 64K clear, 64K restricted and 56K
- 6** BUSY — unit or DN is busy
- 7** CALL REF # — PRI call reference number assigned by the system
- 8** CALL STATE — specifies the PRI call as active or inactive
- 9** CALLED NO — PRI dialed number
- 10** CALLING NO — PRI home location code and DN of originating party
- 11** CONF — conference call

- 12** COS_ORIG, COS_TERM — class of service restrictions for originating and terminating party. Possible values are:
 - a** UNR = Unrestricted
 - b** TLD = Toll Denied
 - c** SRE = Semi-restricted
 - d** FRE = Fully Restricted
 - e** FR1 = Fully Restricted class 1
 - f** FR2 = Fully Restricted class 2
 - g** CUN = Conditionally Unrestricted
 - h** CTD = Conditionally Toll Denied
- 13** CSD — Confree Selectable Display Key
- 14** DARK_CONSOLE — the call is being temporarily released by a console. Also outputs three types of recall:
 - a** RLSED = console released the call is getting recall
 - b** FLASH = Flash recall
 - c** CAMP = Camp-On recall
- 15** DIAL DN— the dialed number
- 16** DIAL xxx yy TTR zz — TDS on loop xxx and timeslot yy connected to Digitone Receiver timeslot zz
- 17** DG_MAN xxx FCA_INDEX xxx TOD x — Digit Manipulation Index, Free Area Screening and Time Of Day value
- 18** DIRECT MW_CALL — Message Waiting indication is being given
- 19** DSBL — the unit has been disabled
- 20** DST — console destination information to follow
- 21** EMR100 — ACD emergency conference
- 22** EXP_ROUTE — identifies if an expensive route is being used for an ESN call
- 23** IDLE — TN or key is idle

- 24 HLD — number of calls On-Hold at the console
- 25 HOLD — call is On-Hold
- 26 LOCKOUT — the unit is in lockout state
- 27 LOOP — attendant console LPK key
- 28 MAIN_PM — this is the main progress mark which identifies the state of the call, possible values are listed below: (See also AUX_PM)
 - a BUSY = originator is receiving busy tone
 - b CDR = CPU is processing Call Detail Recording records
 - c DELAY DIAL = CPU is in a timing sequence while establishing a delay dial start trunk call
 - d DIAL = one or more digits have been dialed, system requires more digits
 - e ESTD = call is established between the originating and terminating party
 - f HALFDISC = Trunk with answer supervision has not received a disconnect signal from the far-end during trunk idling
 - g READY = CPU is ready to process a function for the originating TN
 - h REOR = originator is receiving intercept treatment
 - i RING = originator is receiving ringback tone
 - j WAIT = dial tone waiting queue
 - k WINKON = CPU is in a timing sequence while establishing a wink start trunk call
- 29 MARP — indicates the TN is Multiple Appearance Redirection Prime
- 30 MBSY — unit is in maintenance busy state
- 31 NARS_PM — NARS call progress mark
- 32 NEW_RLIST_INDEX NWQ_RLIST_ENTRY — network queue route list index and route list entry
- 33 NCOS_ORIG, NCOS_TERM — Network Class of Service for originating and terminating party

- 34 OHQ/CBQ — call is in the Off-Hook queue or Callback queue
- 35 OSN — On-Site Notification key
- 36 PRIORITY NWQ_EXT_ROUTE — the priority in the queue and extended route queuing
- 37 PTY SLOT — TDS priority timeslot; reserved by the CPU while a user is receiving tones (this timeslot may be required by the CPU to further process the call). Normally PTY SLOT is the same timeslot as SLOT.
- 38 QUEU — a call may be in one of the following CPU timing queues:
 - 128 = 128 ms timing queue
 - 2S = 2 second timing queue
 - CAD = cadence
 - CDR = Call Detail Recording processing queue
 - DIAL = dialing queue
 - IDLE = idle queue
 - NONE = call is not in a timing queue
 - RING = ringing queue
- 39 RCVR xx SET yy — timeslot to the Digitone Receiver (xx) and the telephone (yy)
- 40 RGAT_PM — Ring Again progress mark
- 41 RL_IND xx RL_ENT xx — NARS/BARS route list index and entry number
- 42 SRC — console source information to follow
- 43 SBSY — unit is software busy
- 44 SLOT — the timeslot used by the originator and terminator
- 45 TALKSLOT — identifies the timeslot and junctor (if applicable) used by the originator and terminator
- 46 TDTN — Tone Digit Switch loop and timeslot
- 47 TERM — originating party information, identifies the TN or DN where the call terminates, output depends on type of telephone or console

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- 48 TGAR_ORIG, TGAR_TERM — Trunk Group Access Restriction for
originating and terminating party
- 49 TTR = Digitone Receiver TN

Basic commands

DALL	Disable all enhanced trace commands.
DIST n	Disable the enhanced trace operation.
ENTC l s c u t	Enable the enhanced trace command for a TN.
ENTD l ch t	Enable the enhanced trace command for a digital trunk.
FITR	Get information about the enhanced trace function.
GOTR	Begin enhanced trace commands. This command starts the trace operation specified with the ENTC and ENTD commands.
STPT	Stop the enhanced trace command.
TRAC c acod	List route number, type and status of each trunk for customer c
TRAC c dn	Trace calls for customer c Directory Number or Local Steering Code dn
TRAC c r m	Trace calls, customer c, route r, member m
TRAK c u	Trace calls associated with this unit
TRAK c u k	Trace calls associated with key k on specified unit
TRAC x yyyy	Trace using customer number as DN
TRAC xx...xx DEV	Print auxiliary data
TRAC zzzz	Trace using TN of the set to be traced
TRAD loop ch	Trace DTI or DLI calls, channel ch of loop
TRAT c a	Trace calls, attendant a of customer c
TRAT c a k	Trace calls associated with key k of attendant console a for customer c
TRAO c u	Trace attendant calls, this unit
TRAO c u k	Trace attendant calls on key k
TRAO xx...xx DEV	Print auxiliary data

Alphabetical list of commands

Command	Description
DALL	Disable all enhanced trace commands. This command disables all trace commands enabled with ENTC or ENTND command. You must stop the trace with the STPT command before disabling all the commands with DALL.
DIST n	Disable the enhanced trace operation. This command disables the trace command enabled with ENTC or ENTND command. This command is used once a trace command is started then stopped. Where: n = the entry number (as seen with the FITR command)
ENTC c 00 u t	Enable the enhanced trace command for a TN. This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation. Where: l = loop, s = shelf, c = card, u = unit and t = the length of time the trace command operates. The format for the trace command duration (t) is HHMM, where HH = hours (0-23) and MM = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100 The time duration must be at least 1 minute, and no more than 23 hours.
ENTND l ch t	Enable the enhanced trace command for a digital trunk. This command enables the trace capability for the TN specified. Note that this command does not start the trace immediately. Use the GOTR command to begin the trace operation. Where: l = loop, s = shelf, c = card, u = unit and t = the length of time the trace command operates. The format for the trace command duration (t) is HHMM, where HH = hours (0-23) and MM = minutes (0-59). For example, for a duration of 5 minutes, t = 0005; for 1 hour, t = 0100. The time duration must be at least 1 minute, and no more than 23 hours.

FITR	Get information about the enhanced trace function. This command queries the TNs or Digital trunks being traced with the ENTC and ENTD commands. The output is shown as follows: <table><tr><td>ENTRY</td><td>TN or TRUNK</td><td>TIME</td><td>STATUS</td></tr></table> For example: <table><tr><td>1</td><td>01 0 00 01</td><td>0030</td><td>OFF</td></tr><tr><td>2</td><td>001 04</td><td>1200</td><td>OFF</td></tr></table>	ENTRY	TN or TRUNK	TIME	STATUS	1	01 0 00 01	0030	OFF	2	001 04	1200	OFF
ENTRY	TN or TRUNK	TIME	STATUS										
1	01 0 00 01	0030	OFF										
2	001 04	1200	OFF										
GOTR	Begin enhanced trace commands. This command starts the trace operation specified with the ENTC and ENTD commands.												
STPT	Stop the enhanced trace command. This command stops the enhanced trace operation specified with the ENTC and ENTD commands. This can be used at any time during the trace operation. This does not disable the commands; they can be restarted with the GOTR command. When they are restarted, the duration timer is reset. For example: the timer is set at 30 minutes, but the trace is stopped after 2 minutes. When the trace is restarted (GOTR) the timer is set to 30 minutes.												
TRAC c acod	List route number, type and status of each trunk for customer c.												
TRAC c dn	Trace calls for customer c Directory Number or Local Steering Code dn.												
TRAC c dn	Trace calls, this dn of customer c.												
TRAC c r m	Trace calls, customer c, route r, member m.												
TRAK c 00 u	Trace calls associated with this unit. If a trace is performed on a DTR, an error message is output.												
TRAK c 00 u k	Trace call associated with key k on specified unit.												
TRAC x yyyy	Trace using customer number as DN. Where : x = customer number of the set to be traced and yyyy = DN of the key to be traced.												

TRAC xx...xx DEV

Print the auxiliary data related to the call for Network Alternate Route Selection (NARS), Basic Alternate Route Selection (BARS), Coordinated Dialing Plan (CDP) or Ring Again (RGA), where equipped, as well as the normal data for command xx...xx. Command xx...xx can be any of the TRAC commands.

When TYP E is output, E = extended route (not expensive).

TRAC zzzz

Trace using TN of the set to be traced.

Where : zzzz = TN of the set to be traced.

TRAD loop ch

Trace DTI or DLI calls, channel ch of specified loop.

TRAT c a

Trace calls for customer c, attendant a.

TRAT c a k

Trace calls associated with key k of attendant console a for customer c.

TRAO c 00 u

Trace attendant calls, this unit.

TRAO c 00 u k

Trace attendant calls on key k.

TRAT xx...xx DEV

Print auxiliary data.

Print the auxiliary data related to the call for Network Alternate Route Selection (NARS), Basic Alternate Route Selection (BARS), Coordinated Dialing Plan (CDP) or Ring Again (RGA), where equipped, as well as the normal data for command xx...xx. Command xx...xx can be one of the TRAT commands.

LD 81—Features and Station Print

Overlay program 81 is used to print a list or count of telephones with selected features. It also allows last service change date information to be printed.

A TN which is the Multiple Appearance Redirection Prime (MARF) is indicated by an “M” following FEAT (when TYPE = MCN, SCN, MCR, or SCR).

Prompts and responses

Prompt	Response	Comment
REQ	aaa	Request (aaa = LST, CNT, or END)
CUST	xx	Customer
DATE	a...a	Print data from activity date specified (You may enter : dd mmm yyyy or ACT)
PAGE	(NO) YES	Data printed on a per page basis
DES	d...d	1-6 alphanumeric character Office Data Administration System
FEAT	aaaa	Features requested (FEAT responses begin on page 711)
RNPG	xx yy	Ringin <u>g</u> Number Pick Up Group
LSNO	xx yy	List Number
NCOS	xx yy	Network Class of Service
- ADJUST PAPER THEN <cr>	<cr>	Starts printing
NACT	(NO) YES	Next Activity

Alphabetical list of prompts

Prompt	Response	Comment
ADJUST PAPER THEN	<cr>	Starts printing Prompted when PAGE = YES
CUST	xx xx <cr>	One Customer or a range of Customer numbers All Customers
DATE	dd mmm yyyy	Print data from activity date specified. Where: • dd = day (0-31) • mmm = month (JAN-DEC) • yyyy = year
	ACT <cr>	Print data from last Activity date. Disregard date restrictions.
DES	d...d dddd d+ + <cr>	1-6 alphanumeric character Office Data Administration System (ODAS) Station Designator Print data for stations with specific DES. Print data for stations with a DES starting with d. Print data for all stations with no DES. Print data for all stations.
FEAT		Features requested Enter a specific feature mnemonic or one the following for groups of features: ALL, COS, DNK, SETS, SCL, RNP or 500. FEAT is repeated until <cr> is entered.
	2000 500	All M2000 telephones 500/2500 type telephone Print both MNL and DIP telephones. 2500 type telephones are requested by DTN entry.
	AAA AAD	Automatic Answerback Allowed Automatic Answerback Denied
	AAK	Automatic Answerback Key
	ACD	ACD in calls key

LD 81

Prompt	Response	Comment
ACNT		Assignment of activity codes allowed
ADD		Automatic Digit Display equipped
ADL		Autodial key
ADV		Data port Verification allowed
AGN		ACD Agent
AGT		ACD Agent's key
AGTA		ACD services for 500/2500 telephone Allowed
AGTD		ACD services for 500/2500 telephone Denied
ALL		All features When REQ = LST, only the features actually programmed on telephones are listed along with the associated TN. Features not listed are RNPK, DIP and MNL. When REQ = CNT, features available in the system software are listed even if they are not programmed on any telephone. Not listed are RNPK, 500, 2500, SL-1, 2000, and 3000.
AO3		Three-party conference key
AO6		Six-party conference key
ARC		Attendant Recall key
ARHA		Audible Reminder of Held Call Allowed
ARHD		Audible Reminder of Held Call Denied
ASCA		Alarm Security Allowed
ASCD		Alarm Security Denied
AUTD		Authorization Code Denied
AUTR		Authorization Code Restricted
AUTU		Authorization Code Unrestricted
BFS		Busy Forward Status key
C6A		Six-Party Conference Allowed
C6D		Six-Party Conference Denied

Prompt	Response	Comment
	CA	Combined No Hold Conference and Autodial
	CAS	Centralized Attendant Service
	CCOS	Controlled Class of Service key
	CCSA	Controlled Class of Service Allowed
	CCSD	Controlled Class of Service Denied
	CDCA	Conferee Display Count Allowed
	CDCD	Conferee Display Count Denied
	CDMA	Station Activity Records Allowed
	CDMD	Station Activity Records Denied
	CFHA	List/count sets with CFHA CLS
	CFHD	List/count sets with CFHD CLS
	CFTA	Call Forward by Call Type Allowed
	CFTD	Call Forward by Call Type Denied
	CFW	Call Forward key
	CFXA	Call Forward number to External DN Allowed
	CFXD	Call Forward number to External DN Denied
	CHD	Combined No Hold Conference and Direct Hot Line
	CHG	Charge Account key
	CHL	Combined No Hold Conference and Hot Line list
	CLTA	Network Call Trace Allowed
	CLTD	Network Call Trace Denied
	CMSA	Command and Status link Allowed
	CNAA	CLASS Calling Name Multiple Data Format Allowed.
	CNAD	CLASS Calling Name Denied.
	CNIA	Call Number Identification Allowed
	CNID	Call Number Identification Denied
	CNTA	Network ACD Countdown Allowed
	CNTD	Network ACD Countdown Denied

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Prompt	Response	Comment
CNUA		CLASS Calling Number Multiple Data Format Allowed.
CNUD		CLASS Calling Number Denied.
CNUS		CLASS Calling Number Single Data Format Allowed.
COS		Print stations with Class of Service restrictions. These are telephones with equipped with C6A, C6D, CMSA, CNDA, CNDD, CTD, CUN, DSI, FRE, FR1, FR2, NCOS, SFA, SFD, SRE, TLD, TTA, TTD, UNR and VMA.
CPN		Display Calling Party Number key
CS		Combined No Hold Conference and Speed Call
CSD		Conferee Selectable Display key
CTD		Conditionally Toll Denied
CUN		Conditionally Unrestricted
CWA		Call Waiting Allowed
CWD		Call Waiting Denied
CWT		Call Waiting key
DAG		ACD Display Agents key
DCFW		Default call forward for Phantom TNs
DDGA		DN Display on other set Allowed
DDGD		DN Display on other set Denied
DDS		Digit Display allowed
DDV		Data port Verification denied
DIG		Dial Intercom Group
DIP		Dial Pulse telephone (500 type)
DNDA		Dialed Name Display Allowed
DNDD		Dialed Name Display Denied
DNK		Telephones with MCN, MCR, SCN, and SCR keys
DPU		DN Pickup key

Prompt	Response	Comment
	DPUA	DN Pickup Allowed
	DPUD	DN Pickup Denied
	DRC	DID Route Control
	DRG1	Digital telephone Distinctive Ringing (high/fast)
	DRG2	Digital telephone Distinctive Ringing (high/slow)
	DRG3	Digital telephone Distinctive Ringing (low/fast)
	DRG4	Digital telephone Distinctive Ringing (low/slow)
	DSP	Digit Display key
	DTA	Data set
	DTN	Digitone dial telephone (2500 type)
	DWC	ACD Display Waiting Calls key
	FAXS	Facsimile servers
	FBA	Call Forward Busy Allowed
	FBD	Call Forward Busy Denied
	FITA	Flexible Incoming Tones Allowed
	FITD	Flexible Incoming Tones Denied
	FLXA	Flexible voice/data TN allowed
	FLXD	Flexible voice/data TN denied
	FNA	Call Forward No Answer Allowed
	FND	Call Forward No Answer Denied
	FR1	Fully Restricted class 1
	FR2	Fully Restricted class 2
	FRE	Fully Restricted
	GPU	Group Call Pickup key
	GPUA	Group call Pickup Allowed
	GPUD	Group call Pickup Denied
	GRC	Group Recall key
	HFA	Handsfree Allowed M2616
	HFD	Handsfree Denied M2616

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Prompt	Response	Comment
	HOTD HOTL	Enhanced Hot Line, Direct entry method Enhanced Hot Line, List entry method
	HPR	High Priority station
	HTA HTD	Hunting Allowed Hunting Denied
	HTL	Hot Line
	ICDA ICDD	Internal CDR Allowed Internal CDR Denied
	ICF	Internal Call Forward key
	IMA	IMS or IVMS Allowed
	IRA IRD	Incoming Ringing line preference Allowed Incoming Ringing line preference Denied
	KLS	Key/lamp Strip
	LDTA LDTD	Line Disconnect Tone allowed Line Disconnect Tone denied
	LLC1 LLC2 LLC3 LLCA LLCN	Line Load Control level 1 Line Load Control level 2 Line Load Control level 3 Line Load Control Allowed Line Load Control off
	LNA LND LNK	Last Number Redial Allowed Last Number Redial Denied Last Number Redial Key
	LOL	Long Line Class of Service
	LPA LPD	Message Waiting lamp Allowed Message Waiting lamp Denied
	LPR	Low Priority station
	(MBXD)	Multi-Party Operation (MPO) Blind Transfer Denied.

Prompt	Response	Comment
	MBXA	Multi-Party Operation (MPO) Blind Transfer Allowed. Multi-Party Operations (MPO) package 141 must be equipped to enter MBXD or MBXA.
	MCD	Message Center DN
	MCK	Message Cancellation Key
	MCN	Multiple Call Non-Ringing DN A TN which is the Multiple Appearance Redirection Prime (MARF) for the DN is indicated by an "M" in the output (MCN M).
	MCR	Multiple Call Ringing DN A TN which is the Multiple Appearance Redirection Prime (MARF) for the DN is indicated by an "M" in the output (MCN M).
	MCTA	Malicious Call Trace Allowed
	MCTD	Malicious Call Trace Denied
	MIK	Message Indication Key
	MNL	Manual service
	MON	TN(s) Monitored by at least one BFS key
	MRA	Message Registration Allowed
	MRD	Message Registration Denied
	MSB	Make Set Busy key
	MTA	Maintenance set Allowed
	MWA	Message Waiting Allowed
	MWD	Message Waiting Denied
	MWK	Message Waiting key
	NAMA	Name display on other set Allowed
	NAMD	Name display on other set Denied
	NCOS	Network Class of Service (COS)
	NDD	No Digit Display
	NHC	No Hold Conference
	NIA	Incoming non-ringing line preference Allowed

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Prompt	Response	Comment
	NID	Incoming non-ringing line preference Denied
	NKL	Notification Key Lamps
	NRD	ACD Not Ready key
	NSVC	ACD Night Service key for Supervisor Control
	OLA	Outgoing Line preference Allowed
	OLD	Outgoing Line preference Denied
	ONS	On Premise Station
	OPS	Off Premise Station
	OVB	Attendant Overflow position
	OVDA	Override Allowed (500/2500 telephone)
	OVDD	Override Denied (500/2500 telephone)
	OVR	Override key
	PHD	Permanent Hold
	POA	Optional Privacy Allowed
	POD	Optional Privacy Denied
	PRK	Park key
	PRS	Privacy Release key
	PUA	Call Pickup Allowed
	PUD	Call Pickup Denied
	PVN	Private Line Non-ringing phantom DN
	PVR	Private Line Ringing phantom DN
	RDL	Stored Number Redial
	RGA	Ring Again key
	RLS	Release key
	RNP	Ringing Number Pickup (includes PUA, PUD and RNPK)

Prompt	Response	Comment
	RNPK	Ringing Number Pickup key
	RTDA	Call Redirection by Time of day allowed
	RTDD	Call Redirection by Time of day denied
	SAR	Scheduled Access Restriction
	SCC	Speed Call Controller
	SCI	Station Category Indication Priority Level
	SCL	Speed Call (includes SCU and SCC)
	SCN	Single Call Non-ringing DN
		A TN which is the Multiple Appearance Redirection Prime (MARF) for the DN is indicated by an "M" in the output (MCN M).
	SCR	Single Call Ringing DN
		A TN which is the Multiple Appearance Redirection Prime (MARF) for the DN is indicated by an "M" in the output (MCN M).
	SCU	Speed Call User
	SETS	All telephones
	SFA	Second level Forwarding Allowed
	SFD	Second level Forwarding Denied
	SHL	Short Line Class of Service
	SIG	Buzz key to phantom DN
	SPV	ACD Supervisor
	SRE	Semi-Restricted
	SSC	System Speed Call Controller
	SSU	System Speed Call User
	SWA	Station-to-Station Call Waiting Allowed
	SWD	Station-to-Station Call Waiting Denied
	TAD	Time And Date key

LD 81

Prompt	Response	Comment
	TDD	Touchphone Display
	THF	Centrex Trunk Switchhook Flash
	THFA	Centrex Trunk Switchhook Flash Allowed (500/2500 telephones)
	THFD	Centrex Trunk Switchhook Flash Denied (500/2500 telephones)
	TLD	Toll Denied
	TRC	Malicious Call Trace key
	TRN	Call Transfer key
	TSA	Three-Party Service Allowed
	TVA	Trunk Verification Allowed
	TVD	Trunk Verification Denied
	ULAA	User Level Access Allowed for set based administration
	ULAD	User Level Access Denied for set based administration
	UNR	Unrestricted
	USR	User Selectable Call Redirection key
	USRA	User Selectable Call Redirection allowed
	USRD	User Selectable Call Redirection denied
	UST	Telephone Status feature
	VCC	Voice Call to phantom DN
	VCE	Voice set
	VMA	Server Voice Messaging Allowed
	WTA	Warning Tone Allowed
	WTD	Warning Tone Denied
	WUK	Guest entry of Automatic Wake Up key
	XFA	Call Transfer Allowed
	XFD	Call Transfer Denied
	XHA	Exclusive Hold Allowed
	XHD	Exclusive Hold Denied

Prompt	Response	Comment
	XRA XRD	Ring Again Allowed Ring Again Denied
LSNO		List Number.
	0-8190 0-8190	One Speed Call List Number or a range of list numbers
	<cr>	Print all lists.
		LSNO is prompted when FEAT is SCL, SCU, SCC, SSC, SSU or CS.
NACT	(NO) YES END	Next Activity Return to REQ prompt. Print current system data and exit overlay. Exit Overlay program.
NCOS		Network Class of Service. NCOS is prompted when FEAT = COS or NCOS.
	0-99 0-99	One NCOS group number, or a range of group numbers for all features
PAGE	(NO) YES	Data printed on a per page basis
REQ		Request
	CNT	Print a count of telephones equipped with the features specified in response to the FEAT prompt.
	END	Exit Overlay program.
	LST	List telephones equipped with the features specified in response to the FEAT prompt.
RNPG		Ringing Number Pickup Group.
	0-4095 0-4095	One Ringing Number Pickup Group number or a range of group numbers
	<cr>	Print all groups.
		RPNG is prompted when FEAT = RNP, RNPK, PUA, PUD, DPU, DPUA, DPUD, GPU, GPU A or GPUD.
SGRP		Station Group
	0-999 0-999	One station group number or a range of station group numbers

LD 82—Print Hunt Chain, Multiple Appearance Group

Overlay program 82 allows the printing of hunting patterns and Multiple Appearance groups for system stations.

Refer to the Office Data Administration System NTP (553-2721-100) for detailed information regarding printouts for multiple appearance DN, single appearance DN appearing on telephones with multiple appearance DN, and hunting patterns.

A TN which is the Multiple Appearance Redirection Prime (MARF) is indicated by an “M” preceding the TN in the output.

Prompts and responses

Prompt	Response	Comment
REQ	aaa	Request (aaa = EHT, END, HNT, MAG, MAP)
CUST	xx xx	Customer number or range of customer numbers
DATE	a...a	Print data from activity date specified or last activity date (You may enter : dd mmm yyyy or ACT)
PAGE	(NO) YES	Data printed on a per-page basis
DES	a...a	Print all telephones with DES "dddddd"
DN	xxxx	Print specific DN
- ADJUST PAPER THEN <cr>		
	<cr>	Starts printing
NACT	(NO) YES	Next Activity

Alphabetical list of prompts

Prompt	Response	Comment
ADJUST PAPER THEN	<cr>	Starts printing. Prompted when PAGE = YES
CUST	xx xx <cr>	Customer number or range of customer numbers Print data for all customers.
DATE	dd mmm yyyy	Print data from activity date specified. Where: • dd = day (0-31) • mmm = month (JAN-DEC) • yyyy = year
	ACT <cr>	Print data from last activity date. Disregard date restrictions.
DES	dddddd d+ + <cr>	Print all telephones with DES "dddddd" Print all telephones with DES "d" Print all telephones with no DES assignment Disregard DES
DN	xxxx xxxx xxxx ALL <cr>	Print specific DN Print range of DNs Print data when REQ = MAG or MAP Print data for all DNs DN may be up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150.
NACT	(NO) YES END	Next Activity Return to REQ prompt Print current system data and exit Overlay Exit Overlay program
PAGE	(NO) YES	Data printed on a per-page basis
REQ	EHT END HNT	Request External Hunting pattern (except regular and short hunting) Exit Overlay program Hunting pattern (except short hunting and EHT)

LD 82

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Prompt	Response	Comment
	MAG	Multiple Appearance Groups Print Multiple Appearance Groups including all Single Appearance DNs assigned on telephones having Multiple Call Assignments.
	MAP	Multiple Appearance Print Multiple Appearance DN and associated TNs. The hunt pattern displayed shows only the first TN in a MADN hunt group.

LD 83—Terminal Number Sort and Print

Overlay program 83 allows the printing of a list of TNs and of TN blocks in Designation (DES) order.

“MARF” is output after the DN when printing the TN block (NOT when using the LST command) if the TN is the Multiple Appearance Redirection Prime.

Prompts and responses

Prompt	Response	Comment
REQ	aaa	Request (aaa = END, LST, TNB)
CUST	xx xx	Customer number or range of customer numbers
DATE	a...a	Print data from activity date specified or last activity date (You may enter : dd mmm yyyy or ACT)
PAGE	(NO) YES	Data printed on a per-page basis
- ADJUST PAPER THEN <cr>	<cr>	Starts printing
NACT	(NO) YES	Next Activity

Alphabetical list of prompts

Prompt	Response	Comment
ADJUST PAPER THEN	<cr>	Starts printing
CUST	xx xx <cr>	Customer number or range of customer numbers Print data date for all customers
DATE	dd mmm yyyy	Print data from activity date specified. Where: dd = day (0-31) mmm = month (JAN-DEC) yyyy = year
	ACT <cr>	Print data from last activity date Disregard date restrictions
NACT	(NO) YES END	Next Activity Return to REQ prompt Print current system data and exit overlay Exit Overlay program
PAGE	(NO) YES	Data printed on a per-page basis
REQ	END LST TNB	Request Exit Overlay program Print List of TNs in designator order Print list of TN blocks in designator order

LD 84, 85—Set Designation Entry (ODAS)

Overlay program 84 allows the addition of line designators to existing single line (500/2500) sets.

Overlay program 85 allows the addition of line designators to existing multi-line (M2000, M2616 etc.) sets.

If currently active on a call, the station will be disconnected after the last <cr>.

Prompts and responses

Prompt	Response	Comment
TN	c u	Terminal Number
DES	d...d	1-6 character alphanumeric designator

LD 84, 85

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Alphabetical list of prompts

Prompt	Response	Comment
DES	d...d	1-6 character alphanumeric Office Data Administration System (ODAS) Station Designator
TN	c u END	Terminal Number Exit Overlay program

LD 86—Electronic Switched Network 1

Overlay program 86 allows data defining the NARS/BARS/CDP features to be created, modified, and printed.

Prompts and responses

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FEAT = ESN (Electronic Switched Network)	page 733
FEAT = ITGE (Incoming Trunk Exclusion)	page 734
FEAT = RLB (Route List)	page 735

FEAT = DGT (Digit Manipulation)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	DGT	Feature = DGT (Digit manipulation)
MXLC	0-1000	Maximum number of LOC codes (NARS only)
DMI	(0)-999	Digit Manipulation Index numbers
DEL	(0)-19	Number of leading digits to be Deleted
INST	x...x	Insert
CTYP	a...a	Call Type to be used by the manipulated digits (a...a = (NCHG), INTL, NPA, NXX, LOC, CDP, SPN, or UKWN)

FEAT = ESN (Electronic Switched Network)

Prompt	Response	Comment
REQ	a....a	Request (a....a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	ESN	Feature = ESN (Electronic switched network)
MXLC	0-1000	Maximum number of LOC codes (NARS only)
MXSD	xxx	Maximum number of Supplemental Digit restriction blocks
MXIX	xxx	Maximum number of Incoming Trunk Group exclusion tables
MXDM	0-256	Maximum number of Digit Manipulation tables
MXRL	xxx	Maximum number of Route Lists
MXFC	0-256	Maximum number of Free Calling area screening tables
MXFS	0-255	Maximum number of Free Special number screening tables
CDP	(YES) NO	Coordinated Dialing Plan feature for this customer
- MXSC	0-5000	Maximum number of Steering Codes
- NCDP	3-7	Number of digits in CDP DN (DSC + DN or LSC + DN)
AC1	xx	One or two digit NARS/BARS Access Code 1
AC2	xx	One or two digit NARS Access Code 2
DLTN	(YES) NO	NARS/BARS Dial Tone after dialing AC1 or AC2 access codes
ERWT	(YES) NO	Expensive Route Warning Tone
- ERDT	0-(6)-10	Expensive Route Delay Time
TODS	aa-aa	Time of Day Schedules
RTCL	(DIS) YES	Routing Controls
NMAP	xx yy	NCOS Map
ETOD	1-7	Extended Time of Day schedule
TGAR	(NO) YES	Check for Trunk Group Access Restrictions

FEAT = ITGE (Incoming Trunk Exclusion)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	ITGE	Feature = ITGE (Incoming Trunk Exclusion)
MXLC	0-1000	Maximum number of LOC codes (NARS only)
ITEI	1-127	Incoming Trunk group Exclusion Index number
RTNO	0-127	Route Number associated with index

FEAT = RLB (Route List)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	RLB	Feature = RLB (Route list)
MXLC	0-1000	Maximum number of LOC codes (NARS only)
RLI	xxx	Route List Index to be accessed
ENTR	xxx	Entry number for NARS/BARS Route list
LTER	(NO) YES	Local Termination entry
ROUT	0-511	Route number
TOD	0-7	Time of Day schedule
CNV	(NO) YES	Conversion to LDN
EXP	(NO) YES	Expensive route
FRL	(0)-7	Facility Restriction Level
DMI	(0)-999	Digit Manipulation Index
FCI	(0)-255	Free Calling Area Screening Index number
FSNI	(0)-1-255	Free Special Number Screening Index
CBQ	(NO) YES	Call Back Queuing
ISSET	(0)-8	Initial Set
MFRL	aaa	Set Minimum Facility Restriction Level (aaa = (MIN) or 0-7)

Alphabetical list of prompts

Prompt	Response	Comment
AC1	xx xxxx	One or two digit NARS/BARS Access Code 1 One to four digit Flexible Numbering Plan Access Code 1 The access code cannot conflict with the numbering plan.
AC2	xx xxxx	One or two digit NARS Access Code 2 One to four digit Flexible Numbering Plan Access Code 2 The access code cannot conflict with the numbering plan.
CBQ	(NO) YES	Call-Back Queuing not allowed Call-Back Queuing allowed CBQ is not prompted if LTER = YES.
CDP	(YES) NO	Coordinated Dialing Plan feature for this customer
CNV	(NO) YES	Conversion to LDN required (NARS). Not prompted if route is TKTP = ADM or LTER = YES
CTYP	(NCHG) INTL NPA NXX LOC CDP SPN UKWN	Call Type to be used by the manipulated digits. This call type must be recognized by the far-end switch. Call type will not be changed Special number in International format NPA NXX Location Code Coordinated Dialing Plan Special Number other than International Unknown call type
CUST	xx	Customer number associated with this function as defined in LD 15
DEL	(0)-19	Number of leading digits to be Deleted
DLTN	(YES) NO	NARS/BARS Dial Tone after dialing AC1 or AC2 access codes
DMI	(0) (0)-31 (0)-255 (0)-999	Digit Manipulation Index numbers No digit manipulation required CDP NARS/BARS NARS/BARS with Flexible Numbering Plan (FNP) package 160

Prompt	Response	Comment
		The maximum number of Digit Manipulation tables is defined by prompt MXDM. DMI is not prompted if route TKTP = ADM.
ENTR	0-63 0-6 X0-X63	Entry number for NARS/BARS Route List Route list entry number for CDP To remove an entry
ERDT	0-(6)-10	Expensive Route Delay Time (in 2 second intervals)
ERWT	(YES) NO	Expensive Route Warning Tone Note: ERWT is not supported on TIE trunks. ERWT defaults to of three bursts of tone, but may be modified in LD 56 if Flexible Tones and Cadences (FTC) package 125 is equipped, to indicate that the call will be placed over an expensive route. The user has 3 choices: 1. go On-Hook and abort the call 2. remain On-Hook and accept the call 3. activate Ring Again
ETOD	1-7 X1-X7	Extended Time of Day schedule (day(s) of the week for special TOD schedule) Where:1 = Sunday and 7 = Saturday. To remove a day
EXP	(NO) YES	Expensive route Not prompted if route TKTP = ADM or LTER = YES
FCI	(0)-127 (0)-255	Free Calling area screening Index number BARS NARS Use 0 if no FCAS is required. Not prompted if route TKTP = ADM.
FEAT	DGT ESN ITGE RLB	Feature Digit manipulation data block ESN data block Incoming Trunk Group Exclusion data block Route List data Block
FRL	(0)-7	Facility Restriction Level
FSNI	(0)-1-255	Free Special Number screening Index
ID	x...x	Digits (up to 16) dialed to reach a remote attendant

LD 86

Prompt	Response	Comment
	<cr>	Leave ID unchanged, go to ALT prompt.
INST	x...x	Insert. Where x...x is: • up to 31 leading digits may be inserted
ISSET	(0)-64	Initial Set. Number of entries in Initial Set for route list block.
ITEI		Incoming Trunk group Exclusion Index
	1-127	BARS
	1-255	NARS
LTER	(NO) YES	Local Termination entry
MFRL	(MIN) 0-7	Set Minimum Facility Restriction Level used to determine autocode prompting. Use default of MIN to set to the minimum FRL value.
MXDM		Maximum number of Digit Manipulation tables (you must count Table 0 for the system)
	0-32	CDP
	0-256	NARS/BARS
	0-1000	NARS/BARS with Flexible Numbering Plan (FNP) package 160 equipped
MXFC		Maximum Free Calling area screening tables
	0-127	BARS
	0-255	NARS
		Prompted when NARS/BARS equipped
MXFS	0-255	Maximum number of Free Special Number Screening tables
MXIX		Maximum number of Incoming Trunk Group Exclusion tables (use "0" if not required)
	0-127	BARS
	0-255	NARS
MXLC	0-999	Maximum number of LOC codes (NARS only)
MXRL		Maximum number of Route Lists
		If MXRL = 0, the system will not allow the creation of any route lists.
	0-128	CDP
	0-128	BARS
	0-256	NARS
	0-1000	NARS with Flexible Numbering Plan (FNP) package 160 equipped

Prompt	Response	Comment
MXSC	0-10000	Maximum number of Steering Codes
MXSD	(0)-1500	Maximum Supplemental Digit restriction blocks Range for both BARS and NARS
NCDP		Define DN length for CDP A Coordinated Dialing Plan (CDP) consists of the CDP code and the Directory Number (DN). This dialing plan does not need an access code because the CDP code is part of the internal dialing plan. The CDP code is one of the following: the Distant Steering Code (DSC) or the Local Steering Code (LSC)
	3-7	Number of digits in CDP DN (DSC + DN or LSC + DN)
	3-10	Number of digits in CDP DN with Directory Number Expansion (DNXP) package 150
NMAP	xx yy	NCOS Map (NCOS numbers to be applied for routing controls). Where: • xx = current NCOS number • yy = NCOS number to be applied for BARS/CDP or NARS when routing control is in effect. NCOS ranges: • 0-99
REQ	CHG END LCHG NEW OUT PRT	Request Change existing data block. Exit Overlay program. Print date and time that each data group was last changed (data groups include: ESN, DGT, RLB, and ITGE) Create new data block. Remove data block. Print data block.
RLI	0-127 0-255 0-999	Route List Index to be accessed CDP and BARS NARS FNP
ROUT	0-511	Route number Not prompted if LTER = YES.

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Prompt	Response	Comment
RTCL	(DIS) YES	Disable Routing Controls. Enable or modify Routing Controls.
RTNO	0-511	Route Number associated with index Precede with X to delete an existing route.
TGAR	(NO) YES	Check for Trunk Group Access Restrictions Ignore TGAR/TARG when call is placed through BARS. Examine TGAR/TARG when call is placed through BARS.
TOD	0-1 0-7	Time of Day schedule CDP NARS/BARS Precede with X to turn off schedule.
TODS	1-31 0 0-1 0-7 0-7 hh mm hh mm 0-1 hh mm hh mm X1-X31 X0 <cr>	Time of Day schedule Schedule period to be changed. Catch-all period. Start and stop times are not relevant for this period. The next prompt is ALST. CDP NARS/BARS Schedule number, start hour, start minute, end hour, end minute for NARS/BARS. Schedule number, start hour, start minute, end hour, end minute for CDP. Remove the schedule period Remove/clear all alternatives associated with period 0. This leaves the catch-all treatment as local attendant treatment. End NAS feature data setup and return to REQ prompt.
TONE	SCC DIAL	SCC dial tone type expected Normal dial tone type expected
TYPE	CC1 CC2 TIE	SCC Type 1 tone detector application SCC type 2 tone detector application On-network call tone detector application
VDCH	1-15	VNS D-channel number
VDMI	(0) 1-31	VNS Digit Manipulation Index number for the D-channel (ESN routing) No digit manipulation required CDP

Prompt	Response	Comment
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1-255		NARS/BARS
0-999		With Flexible Numbering Plan (FNP) package 160

LD 87—Electronic Switched Network 2

Overlay program 87 allows data which define the NARS/BARS/CDP features to be created, modified and printed.

Prompts and responses

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FEAT = FSNS (Free Special Number Screening)	page 745
FEAT = NCTL (Network Control)	page 746

FEAT = CDP (Coordinated Dialing Plan)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	CDP	Feature = CDP (Coordinated Dialing Plan)
TYPE	aaa	Type of steering code (aaa = LSC, DSC, or TSC)
LSC	x...x	Local Steering Code
- DEL	0-4	Number of digits to be deleted
DSC	x...x	Distant Steering Code
- FLEN	(0)-24	Flexible Length number of digits
- DSP	aaa	Display (aaa = LSC, LOC, or DN)
- RLI	xxx	Route List to be accessed for Distant Steering Code
TSC	x...x	Trunk Steering Code
- FLEN	(0)-24	Flexible Length number of digits
- ITOH	(NO) YES	Inhibit Time-out option
- RLI	0-999	Route List to be accessed for trunk steering code

FEAT = FCAS (Free Calling Area Screening)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	FCAS	Feature = FCAS (Free Calling Area Screening)
FCI	xxx	Free Calling Area Screening Index number
NPA	xxx	Three-digit NPA code to be screened
NXX	aaaa	NXX codes for NPA (aaaa = DENY or ALLOW)
- DENY	xxx xxx	NXX code or range of codes to be Denied
- ALLOW	xxx xxx	NXX code or range of codes to be Allowed

FEAT = FSNS (Free Special Number Screening)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	FSNS	Feature = FSNS (Free Special Number Screening)
FSNI	1-255	Free Special Number screening Index
SPN	x...x	Special Number code to be screened
XXX	aaaa	Routing codes (aaaa = DENY or ALLOW)
- DENY	xxx xxx	Routing code or range of codes to be Denied
- ALLOW	xxx xxx	Routing code or range of codes to be Allowed

FEAT = NCTL (Network Control)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NCTL	Feature = NCTL (Network Control)
SCBQ	(NO) YES	Call-Back Queuing option
- CBTL	10-(20)-30	Call-Back Queue Time Limit
- RANE	0-511	RAN route number for CBQ offer to ESN stations
NRNG	0-99 1-99	NCOS Range
NCOS	(0)-99	Network Class of Service group number
- EQA	(NO) YES	Equal Access associated with this NCOS group
- FRL	(0)-7	Facility Restriction Level
- RWTA	(NO) YES	Expensive Route Warning Tone
- NSC	(NO) YES	Network Speed Call access allowed
- - LIST	0-253	List numbers to which System Speed Call has access
- CBQ	(NO) YES	Call Back Queuing eligibility
- ROUT	a	Call Back Queuing on Initial or All Routes (a = (I) or A)
- RADT	(0)-30	Route Advance Timer
- ARDL	a	ARDL network route selection is allowed from both initial and extended route sets or only the initial route set (a = (A) or I)
TOHQ	0-7	TCOS OHQ eligibility

Alphabetical list of prompts

Prompt	Response	Comment
ALLOW	xxx xxx <cr>	Routing code (NXX) code or range of codes to be allowed Stop ALLOW prompt
CBQ	(NO) YES	Call Back Queuing eligibility
CBTL	10-(20)-30	Call Back Queue Time Limit (in 2 second increments) This is the time in which the user must respond to Ring Again feature to accept the CBQ call. Applies to multi-line sets only.
CUST	0	Customer number associated with this function as defined in LD 15
DEL	0-4 0-7	Number of digits to be Deleted Up to 7 digits with Directory Number Expansion (DNXP) package 150
DENY	xxx xxx <cr>	Routing (NXX) code or range of codes to be denied Stop DENY prompt.
DMI	0-31 0-999	Digit Manipulation Index for LSC With Flexible Numbering Plan (FNP) package 160
DSC	xxxx	Distant Steering Code Up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150. This is reprompted until <CR> is entered.
DSP	(LSC) HLOC DN	Display Local Steering Code Home Location code Directory Number to be used for CLID Prompted with Flexible Numbering Plan (FNP) package 160 and ISDN are equipped.
EQA	(NO) YES	Equal Access associated with this NCOS group
FCI	1-127 1-255	Free Calling area screening Index number BARS NARS Table 0 is network reserved to indicate that no FCAS is applied.
FEAT	CDP FCAS	Feature Coordinated Dialing Plan Free Calling Area Screening

LD 87

Prompt	Response	Comment
	FSNS	Free Special Number Screening (allowed with Flexible Numbering Plan (FNP) package 160)
	NCTL	Network Control
FLEN	(0)-24	Flexible Length number of digits Prompted with Flexible Numbering Plan (FNP) package 160
FRL	(0)-7	Facility Restriction Level FRL is assigned to each NCOS. It determines the entries in a Route List (RLI) to which it has access. 0 is the most restrictive, 7 is the least restrictive and can access more entries.
FSNI	1-255	Free Special Number screening Index
ITOH	(NO) YES	Inhibit Time-out option
LIST	0-4095 <cr>	List numbers to which System Speed Call has access All lists Precede with X to remove SSC list.
LSC	xxxx	Local Steering Code Up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150. This is reprompted until <CR> is entered.
MPRI	(0)-3	Maximum Priority attainable in CBQ
NCOS NPA	(0)-99 xxx	Network Class of Service group number Three-digit NPA code to be screened (the first digit must be 2-9; the second and third digits can be 0-9). Omit the "1" in 1 + NPA format. The allowed responses are 200-999. Only 3 digits are allowed, even when using 1 + dialing. BARS allows up to 7 NPA codes per table with a maximum of 800 NXX codes each. Allow up to 15 NPA codes per table with BARS. NARS allows up to 15 NPA codes per table with a maximum of 800 NXX codes each.
	xxx yyy	Area code or extended NPA code translation. Where xxx & yyy = 200 - 999. FCAS accepts only three digits for the NPA, even if 1 + dialing in use.
NRNG	0-99 1-99	NCOS Range (starting and ending number for NCOS printing)

Prompt	Response	Comment
	<cr>	Pressed without defining the ending number, then only the NCOS with the starting number defined is printed. Prompted when REQ = PRT.
NSC	(NO) YES	Network Speed Call access allowed
NXX	DENY ALLOW	NXX codes to be denied for NPA NXX codes to be allowed for NPA
RADT	(0)-30	Route Advance Timer (in 30 second increments, where: 1 = 30 seconds and 30 = 15 minutes)
RANE	0-511	RAN route number for CBQ offer to ESN stations Enter X to remove RAN route.
REQ	CHG END LCHG NEW OUT PRT	Request Change existing data block Exit Overlay program Print date and time that each data group level was last changed (data groups include: NCTL, FCAS, FSNS, LSC, DSC, and TSC) Create new data block Delete existing data block Print data block
RLI	0-31 0-127 0-255 0-999	Route List accessed for trunk or distant steering code CDP BARS NARS Flexible Numbering Plan (FNP)
ROUT	(I) A	Call Back Queuing on Initial routes The system offers queuing only after examining ISET (Initial Set) entries. Call Back Queuing on All routes The system examines all entries in the route list, both ISET (Initial Set) and ESET (Extended Set) before offering queuing.
RWTA	(NO) YES	Expensive Route Warning Tone
SCBQ	(NO) YES	Call Back Queuing option
SPN	x...x	Special Number code to be screened SPN can be 1 to 19 digits

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Prompt	Response	Comment
TOHQ	0-7 <cr>	TCOS OHQ eligibility Which TCOS (i.e., FRL) are OHQ eligible (Up to 8 entries). No TCOS are OHQ eligible Precede with X to remove OHQ eligibility from a TCOS.
TSC	xxxx	Trunk Steering Code Up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150. This is reprompted until <CR> is entered.
TYPE	LSC DSC TSC FSNS ALL	Local Steering Code Distant Steering Code Trunk Steering Code Free Special Number Screening Index All steering codes
XXX	DENY ALLOW	Routing codes to be denied Routing codes to be allowed

LD 88—Authorization Code

Overlay program 88 allows data for Basic Authorization Code (BAUT) and Network Authorization Code (NAUT) to be created, modified and printed.

Prompts and responses

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AUB or RAUB: Authcode or Room Authcode data block

Prompt	Response	Comment
REQ	aaa	Request (aaa = CHG, END, NEW, OUT, or PRT)
TYPE	aaaa	Type = AUB (Authcode) or RAUB (Room Authcode)
CUST	0	Customer number associated with this function
SPWD	xxxx	Secure Data Password
ALEN	1-14	Authcode Length
ACDR	NO YES	Activate CDR for authcodes
AUTHCOD_ALRM	(OFF) ON	Authcode Alarm
RANR	0-511	RAN Route number
RTRY	(NO) YES	(Disable) Enable Authcode - last Retry
- RAN2	0-511	Route number for Authcode - last Retry RAN
CLAS	(0)-115	Class code value assigned to authcode (NAUT)
- COS	a...a	Class of Service (a...a = (CTD), CUN, FR1, FR2, FRE, SRE, TLD, UNR, IPNA, or IRGA)
- TGAR	1-(0)-31	Trunk Group Access Restriction
- NCOS	(0)-99	Network Class of Service
AUTO	YES NO	Automatically generate authcodes
- SECR	0000-9999	Security password (NAUT)
- NMBR	1-20000	Number of authcodes to be generated automatically
- CLAS	(0)-115	Class code to be automatically assigned

AUT : Authcode entries data block

Prompt	Response	Comment
REQ	aaa	Request (aaa = CHG, END, NEW, OUT, or PRT)
TYPE	AUT	Type = AUT (Authcode entries)
CUST	0	Customer number associated with this function
SPWD	xxxx	Secure Data Password
CODE	xxxx	Authcode
SARC	NO YES	Scheduled Access Restriction (SAR) Code
- SERV	nnn...nnn	SAR Service functions for SARC
- SGRP	0-999	SGRP number
CLAS	(0)-115	Class code
SECR	0000-9999	Security password

SAR: Scheduled Access Restriction data block

Prompt	Response	Comment
REQ	aaa	Request (aaa = CHG, END, NEW, OUT, or PRT)
TYPE	SAR	Type = SAR (Scheduled Access Restriction)
CUST	0	Customer number associated with this function
SPWD	xxxx	Secure Data Password
SGRP	0-999	SAR Group number
SCDR	(NO) YES	Activate CDR for the SAR code feature
OFFP	1-8	Off-hour Period number
- STAR	hh mm	Start time
- STOP	hh mm	Stop time
- DAYS	d ... d	Respond with a new set of days to be used
- COS	a...a	Class of Service (a...a = (CTD), CUN, FR1, FR2, FRE, SRE, TLD, UNR, IPNA, or IRGA)
- TGAR	1-(0)-31	Trunk Group Access Restriction
- NCOS	(0)-99	Network Class of Service
ICR	(NO) YES	Incoming Calls are Restricted.
LOCK	(1)-8	Lock period

Alphabetical list of prompts

Prompt	Response	Comment
ACDR	(NO) YES	Activate CDR for authcodes. There is no default.
ALEN	1-4 1-7 1-14	Authcode Length (all authcodes are the same length). Room Authcode NAUT BAUT
AUTHCOD_ALARM	(OFF) ON	Disable Authcode Alarm Enable Authcode Alarm
AUTO	YES NO	Automatically generate authcodes. Prompted when Network Authorization Code (NAUT) package 63 is equipped and REQ = "NEW". ALEN must be a minimum of four digits.
CLAS	(0)-115	Class code value assigned to authcode. Cycle continues with CODE. Prompted when SARC = NO. When TYPE = "AUT", enter X to have authcode be an exempt code. When this data is printed, the month in which authcode was deactivated is output. Default is "0" when adding authcode entries.
	X <cr>	Exempt authcode End of input
CODE	xxxx ALL	Authcode (number of digits must equal the ALEN response). May be used to delete Authcodes if Network Authorization Code (NAUT) package 63 is equipped and codes were automatically generated.
COS	(CTD) CUN FR1 FR2 FRE SRE TLD UNR	Class of Service Conditionally Toll Denied Conditionally Unrestricted Fully Restricted class 1 Fully Restricted class 2 Fully Restricted Semi-Restricted Toll Denied Unrestricted
CUST	xx	Customer number associated with this function as defined in LD 15

Prompt	Response	Comment
DAYS	d...d	Respond with a new set of days to be used (a maximum of seven entries in range 1-7)
ICR	(NO) YES	Incoming Calls are Restricted.
LOCK	(1)-8	Lock period
NCOS	0-99	Network Class of Service (enter the new NCOS that will replace the NCOS of the station).
NMBR	1-50000	Number of authcodes to be generated automatically To generate up to 50,000 authcodes, the maximum entry at NMBR is 5000 each time it is prompted.
OFFP	1-8 <cr>	Off-hour Period number Go to ICR prompt.
RANR	0-511 X	RAN route number for "Authcode Last" prompt (NAUT) No RAN route
RAN2	0 - 511 X	Route number for Authcode - last Retry RAN Removes and deactivates Authcode-last Retry RAN
REQ	CHG END NEW OUT PRT	Request Change existing data block Exit Overlay program Create new data block Delete existing data block Print data block
RTRY	(NO) YES	Disable authcode - last Retry. Enable authcode - last Retry. Prompted with Direct Private Network Access (DPNA) package 250.
SARC	NO YES	Scheduled Access Restriction (SAR) Code is to be a Scheduled Access Restriction (SAR) authorization code.
SCDR	(NO) YES	Activate CDR for the SAR code feature.
SECR	0000-9999	Security password as entered during AUTO sequence Prompted when CODE = ALL. Cycle continues with CODE.

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Prompt	Response	Comment
SERV		SAR Service functions for SARC
	(END)	Enable Denied
	ENA	Enable Allowed
	(LKD)	Lock Denied
	LKA	Lock Allowed
	(DSD)	Disable Denied
	DSA	Disable Allowed
	(UND)	Unlock Denied
	UNA	Unlock Allowed
Up to four entries can be made at once.		
SGRP	0-999	Scheduled Access Restriction group (SGRP) number
	ALL	Authorization code is to be a customer SARC.
	<cr>	End of SAR changes, return to REQ.
SPWD	xxxx	Secure Data Password (same password as defined for DISA on a per customer basis in LD 15). Prompt will not appear to user with a LAO password.
STAR	hh mm	Start time The current start time (hours and minutes) is printed individually after the prompt. Respond with the new start time.
	X	Remove value and return to OFFP.
STOP	hh mm	Stop time The current stop time (hours and minutes) is printed individually after the prompt. Respond with the new stop time.
	X	Remove value and return to OFFP.
TGAR	0-(1)-31	Trunk Group Access Restriction range
TYPE		Type of data block
	AUB	Authcode data block
	AUT	Authcode entries data block
	RAUB	Room Authcode data block (Hospitality Management)
	SAR	Scheduled Access Restriction data block

LD 90—Electronic Switched Network 3

Overlay program 90 allows data for network translation tables to be generated and administered.

Prompts and responses

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HLOC: Home Location data block (NARS only)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	HLOC	Type = HLOC (Home Location code)
HLOC	x...x	Home Location code
- DMI	1-255	Digit Manipulation Index

HNPA: Home Number Plan area code data block

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	HNPA	Type = HNPA (Home Number plan area code transmission)
HNPA	xxx xxx yyy	Home Numbering Plan Area code. A leading zero is not allowed.
	1xxx 1xxx yyy	Home NPA (1+ dialing). Where xxx & yyy = 200 - 999.

LOC: Location code data block (NARS only)

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	LOC	Type = LOC (Location code)
LOC	x...x	Location code
- FLEN	(0)-24	Flexible Length
- RLI	xxx	Route List Index
- ITOH	(NO) YES	Inhibit Time Out Handler
- ITEI	xxx	Incoming Trunk group Exclusion Index
- LDN	xx...xx	Listed Directory Number
- DID	(NO) YES	Direct Inward Dial (DID)
- - MNXX	(NO) YES	Multiple NXX
- - SAVE	1-4	Saved digits
- - - OFFC	xxx	Office
- - RNGE	0-9999 0-9999	Range

NPA: Number Plan area code data block

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	NPA	Type = NPA (Number plan area code transmission)
NPA	xxx xxx yyy	Numbering Plan Area code translation
- RLI	xxx	Route List Index
- SDRR	a...a	Supplemental Digit Restriction or Recognition (a...a = ALLOW, ARRN, DDD, DENY, DID, ITED, LDDD, LDID, or STRK)
- - DENY	x...x	Number to be denied within the NPA
- - DMI	1-255	Digit Manipulation Index
- - - LDID	x...x	Local DID number to be recognized
- - LDDD	x...x	Local DDD number to be recognized
- - DID	x...x	Remote DID number to be recognized
- - DDD	x...x	Remote DDD number to be recognized
- - ITED	x...x	Incoming Trunk group Exclusion Digits
- - ALLOW	x...x	Allowed codes
- ITEI	xxx	Incoming Trunk group Exclusion Index

NSCL: Network Speed Call List data block

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	NSCL	Type = NSCL (Network Speed Call List)
- ITEI	xxx	Incoming Trunk group Exclusion Index
NSCC	xxx	Network Speed Call access Code
- SSCL	0-253	System Speed Call List number

NXX : Central Office Code Translation data block

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	NXX	Type = NXX (Central Office Code Translation)
NXX	xxx	Numbering Plan Exchange (Central Office)
- RLI	xxx	Route List Index
- SDRR	a...a	Supplemental Digit Restriction or Recognition (a...a = ALLOW, ARRN, DDD, DENY, DID, ITED, LDDD, LDID, or STRK)
- - DENY	x...x	Number to be denied within the NXX
- - DMI	1-255	Digit Manipulation Index
- - - LDID	x...x	Local DID number to be recognized
- LDDD	x...x	Local DDD number to be recognized
- - DID	x...x	Remote DID number to be recognized
- - DDD	x...x	Remote DDD number to be recognized
- - ITED	x...x	Incoming Trunk group Exclusion Digits
- - ALLOW	x...x	Allowed codes
- ITEI	xxx	Incoming Trunk group Exclusion index

SPN: Special Number Translation data block

Prompt	Response	Comment
REQ	a...a	Request (a...a = CHG, END, LCHG, NEW, OUT, or PRT)
CUST	xx	Customer number associated with this function
FEAT	NET	Feature = NET
TRAN	aaa	Translator (aaa = AC1, AC2, or SUM)
TYPE	SPN	Type = SPN (Special Number Translation)
SPN	xxx	Special Number translation
- FLEN	(0)-24	Flexible Length
- - INPL	(NO) YES	International Dialing Plan
- ITOH	(NO) YES	Inhibit Time-out Handler
- RLI	xxx	Route List Index
- CLTP	a...a	Type of call that is defined by the special number (a...a = (NONE), LOCL, NATL, INTL, SSER, or SERH)
- SDRR	a...a	Supplemental Digit Restriction or Recognition (a...a = ALLOW, ARRN, DDD, DENY, DID, ITED, LDDD, LDID, or STRK)
- - DENY	x...x	Number to be Denied
- - DMI	1-255	Digit Manipulation Index
- - - LDID	x...x	Local DID number to be recognized
- - LDDD	x...x	Local DDD number to be recognized
- - DID	x...x	Remote DID number to be recognized
- - DDD	x...x	Remote DDD number to be recognized
- - ITED	x...x	Incoming Trunk group Exclusion Digits
- - ARRN	x...x	Alternate Routing Remote Number
- - STRK	x...x	Allowed codes for ADM/MDM
- - ALLOW	x...x	Allowed codes
- - - ARLI	0-255 0-999	Alternative Route List Index

Alphabetical list of prompts

Prompt	Response	Comment
ALLOW	x...x	Allowed codes for ADM/MDM to be recognized within the NXX, NPA or SPN The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
ARLI	0-255 0-999	Alternative Route List Index Alternative Route List Index with Flexible Numbering Plan (FNP) package 160. The ARRPN prompt is repeated after the ARLI prompt until <cr> is entered (in response to ARRPN).
ARRN	x...x	Alternate Routing Remote Number to be recognized within the NXX, NPA or SPN. The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
CUST	xx	Customer number associated with this function as defined in LD 15.

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Prompt	Response	Comment
DDD	x...x	Remote DDD number to be recognized within the NPA, NXX or SPN. The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
	<cr>	Return to SDRR prompt.
DENY	x...x	Number to be denied within the NPA,NXX,SPN, or SDR. The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
	<cr>	Return to SDRR prompt.
DID	(NO) YES	Direct Inward Dial (DID) This location arranged for DID.

Prompt	Response	Comment
DID	x...x	Remote DID number to be recognized within the NPA,NXX or SPN. The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked. Precede with X to remove.
	<cr>	Return to SDRR prompt.
DMI	1-255 1-999	Digit Manipulation Index Digit Manipulation Index with Flexible Numbering Plan (FNP) package 160 DMI is only prompted when the Directory Number Expansion (DNXP) package 150 is equipped and SDRR = LDID.
FEAT	NET	Feature Network translation tables
FLEN	(0)-24	Flexible Length (the number of digits the system expects to receive before accessing a trunk and outpulsing these digits)
HLOC	x...x	Home Location code (3 digits) or extended code (3-7 digits)
HNPA	xxx xxx yyy 1xxx 1xxx yyy	Home Numbering Plan Area code (a leading zero is not allowed) Home NPA (1+ dialing) (where xxx & yyy = 200 - 999)
INPL	(NO) YES	International Dialing Plan for special number Default to North American operation when FLEN = 0. Prompted with Flexible Numbering Plan (FNP) package 160, FLEN = 0 and SPN = 0, 00, 01, 011, 411, 611, 911, 800, 1800.

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Prompt	Response	Comment
ITED	x...x	Incoming Trunk group Exclusion Digits (number to be restricted within the NPA for the excluded trunk group) The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
	<cr>	Return to SDRR prompt
ITEI	(0)-127 (0)-255	BARS Incoming Trunk group Exclusion Index NARS Incoming Trunk group Exclusion Index
ITOH	(NO) YES	Inhibit Time-Out Handler
LDDD	x...x	Local DDD number to be recognized within the NPA, NXX, or SPN The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
	<cr>	Return to SDRR prompt

Prompt	Response	Comment
LDID	x...x	Local DID number to be recognized within the NXX, NPA or SPN The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
	<cr>	Return to SDRR prompt
LDN	xx...xx	Listed Directory Number Up to 10 digit listed directory number, including NPA.
LOC	x...x	Location code (3 digits) or extended LOC (3-7 digits) Enter the location code (xxx) and the extended code (xxxx) separated by a space.
MNXX	(NO) YES	Multiple NXX codes and ranges This prompt should not be used with NARS DPNSS1.
NPA		Numbering Plan Area code translation, extended NPA code translation (a leading zero is not allowed)
	xxx	Area code translation
	xxx yyy	Extended NPA code translation 3-10 digits or 4-11 digits with 1+ dialing. Enter the NPA code (xxx) and the extended code (yyy) separated by a space.
	1xxx	Area code translation (1+ dialing)
	1xxx yyy	Extended NPA code translation (1+ dialing). Where: xxx & yyy = 200 - 999
NSCC	xxx	One to three-digit Network Speed Call access Code
NXX		Numbering Plan Exchange (Central Office) (A leading zero is not allowed).
	xxx	Office code translation

LD 90

Prompt	Response	Comment
	1xxx xxx yyy	Office code translation (1+ dialing) Extended NXX code translation 3-7 digits or 4-8 digits with 1+ dialing. Enter the NXX code (xxx) and the extended code (yyy) separated by a space.
	<cr>	Return to REQ.
OFFC	xxx	Office (NXX of the DID number) Prompted if MNXX = YES.
REQ	CHG END LCHG NEW OUT PRT	Request. Change existing data block. Exit Overlay program. Print date and time that each data group was last changed (data groups include: LOC, HLOC, NPA, HNPA, NXX, SPN and NSCL) Create new data block. Delete existing data block. Print data block.
RLI	0-127 0-255 0-999	BARS Route List Index NARS Route List Index Flexible Numbering Plan (FNP) Route List Index Must be in the range specified by prompt MXRL in LD 86, (i.e., $0 \leq \text{RLI} < \text{MXRL}$).
RNGE	0-9999 0-9999	Range (upper and lower limit for DID number range) Inputs must be the same number of digits as the number of trailing digits to be saved.
SAVE	1-4	Saved digits (number of trailing digits to be saved in dialed extension number - DID only) Must be 4 if MNXX = YES.

Prompt	Response	Comment
SDRR	ALLOW ARRN DDD DENY DID ITED LDDD LDID STRK <cr>	Supplemental Digit Restriction or Recognition Allowed codes Alternate Routing Remote Number Recognized remote Direct Distance Dial codes Restricted codes Recognized remote Direct Inward Dial codes Incoming Trunk group Exclusion Digits Recognized Local Direct Distance Dial codes Recognized Local Direct Inward Dial codes For ADM/MDM trunk groups Return to SPN
SPN	x...x	Special Number. Enter a carriage return or <cr> to return to the REQ prompt. Special Number translation Enter the SPN digits in groups of 3 or 4 digits, separated by a space (e.g., xxxx xxx xxxx). The SPN can be up to 19 digits long. The maximum length does not depend on whether or not the first digit of the SPN is a "1". The maximum number of groups allowed is 5.
SSCL	0-4095	System Speed Call List number
STRK	x...x	Allowed codes for ADM/MDM to be recognized within the NXX, NPA or SPN The maximum number of digits to be entered must be the lesser of 10 or: • 7-m (8-m for 1 + dialing) for NXX • 10-m (11-m for 1 + dialing) for NPA • 19-m for SPN Where: m = number of digits entered for NPA, NXX, or SPN. These numbers do not have to be leftwise unique. For non leftwise unique numbers, the longer number takes precedence over the shorter number. However, the exact same numbers (not leftwise unique and the same length) are still blocked.
TRAN	AC1 AC2 SUM	Translator Access Code 1 (NARS/BARS) Access Code 2 (NARS) Summary of Network Translations (allowed when REQ = PRT)

LD 90

Prompt	Response	Comment
TYPE		Type of data block
	ALL	If REQ = PRT, all of the following types will be printed
	HLOC	ESN Home Location Code translation data block (NARS only)
	HNPA	Home NPA translation code
	LOC	ESN Location Code translation data block (NARS only)
	NPA	Numbering Plan Area code translation data block
	NSCL	Network Speed Call List data block
	NXX	Central Office Code Translation data block
	SPN	Special code translation data block

LD 95—Call Party Name Display

Overlay program 95 is used to define, change, remove or print information for the Call Party Name Display (CPND) data block and name assignment, on a per customer basis.

Prompts and responses

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Create or Change Calling Party Name Display (CPND)

Prompt	Response	Comment
REQ	aaa	Req = NEW or CHG
TYPE	CPND	Type = CPND (Calling Party Name Display)
CUST	xx	Customer number associated with this function
CNFG	aaaa	Configuration (aaaa = (ALON), REMO, or LOCL)
MXLN	5-(17)-27	Maximum Length
STAL	(NO) YES	Static Allocation of name storage
- DFLN	5-(13)-27	Default Length
DES	(NO) YES	Designator for Multiple Appearance DN's allowed
RESN	(NO) YES	Display of Reason for redirecting calls allowed
- CFWD	(F) aaaa	Mnemonic for Call Forward All Calls display
- CFNA	(N) aaaa	Mnemonic for Call Forward No Answer display
- HUNT	(B) aaaa	Mnemonic for Busy display
- NITC	(NI) aaaa	Mnemonic for Call Forward Non Intercom Call

- PKUP	(P) aaaa	Mnemonic for Call Pickup display
- XFER	(T) aaaa	Mnemonic for Call Transfer display
- AAA	(A) aaaa	Mnemonic for Attendant Alternative Answering display

Add Calling Party Name Display name

Prompt	Response	Comment
REQ	NEW	Req = NEW
TYPE	NAME	Type = NAME (CPND Name)
CUST	xx	Customer number associated with this function
CPND_LANG	aaa	CPND Language (aaa = (ROM) or KAT)
DIG	0-253 0-99	Dial Intercom Group
- LANG	aaa	Language (aaa = (ROM), KAT, or ALL)
- NAME	a...a	CPND Name in ASCII characters
- XPLN	xx	Expected Length
DISPLAY_FMT	aaaa	Display Format (aaaa = (LAST) or FIRST)
DN	x...x	Directory Number
- LANG	aaa	Language (aaa = (ROM), KAT, or ALL)
- NAME	a...a	CPND Name in ASCII characters
- XPLN	xx	Expected Length
DCNO	0-254	Digit Conversion table Number
- IDC	0-254	Incoming DID Digit Conversion number
- NAME	a...a	CPND Name in ASCII characters

Change Calling Party Name Display name

Prompt	Response	Comment
REQ	CHG	Req = CHG
TYPE	NAME	Type = NAME (CPND Name)
CUST	xx	Customer number associated with this function
CPND_LANG	aaa	CPND Language (aaa = (ROM) or KAT)
DIG	0-253 0-99	Dial Intercom Group
- NAME	a...a	CPND Name using ASCII characters
- DN	x...x	Directory Number
- NAME	a...a	CPND Name in ASCII characters
DCNO	0-254	Digit Conversion table Number
- IDC	0-254	Incoming DID Digit Conversion number
- NAME	a...a	CPND Name in ASCII characters

Remove Calling Party Name Display name

Prompt	Response	Comment
REQ	OUT	Req = OUT
TYPE	NAME	Type = NAME (CPND Name)
CUST	xx	Customer number associated with this function
CPND_LANG	aaa	CPND Language (aaa = (ROM) or KAT)
DIG	0-253 0-99	Dial Intercom Group
DN	x...x	Remove Directory Number x...x
	x...x y...y	Remove range of DN-defined names
	ALL	Remove all DN-defined names
DCNO	0-254	Digit Conversion table Number
- IDC	0-254	Incoming DID Digit Conversion number
ARE YOU SURE?	(YES) NO	(Confirm) or remove operation

Print Calling Party Name Display data and names

Prompt	Response	Comment
REQ	PRT	Req = PRT
TYPE	NAME	Type = NAME (CPND Name)
CUST	xx	Customer number associated with this function
CPND_LANG	aaa	CPND Language (aaa = (ROM) or KAT)
LANG	aaa	Language choice for name display (aaa = ROM or KAT)
PAGE	(NO) YES	Page headers and numbers printed (or not) if the Multiple DN/DIG is specified.
DIG	0-2045 0-99	Dial Intercom Group
SHRT	(NO) YES	Short form
- DN	x...x	Print single Directory Number x...x
	x...x y...y	Print range of Directory Numbers
	x/xx/xxx	Print all DNs starting with x, xx, or xxx
	ALL	Print all DNs
SHRT	(NO) YES	Short form
DCNO	0-254	Digit Conversion table Number
- IDC	nnn	Incoming DID Digit Conversion number
	ALL	All names defined are printed
SHRT	(NO) YES	Short form

Alphabetical list of prompts

Prompt	Response	Comment
AAA	aaa	Attendant Alternative Answering display mnemonic Default = A
ARE YOU SURE?	(YES) NO	(Confirm) or remove operation. The default response is YES.
CFNA	xxxx	Call Forward No Answer display mnemonic Default = N
CFWD	xxxx	Call Forward All Calls display mnemonic Default = F
CNFG	(ALON)	Configuration Standalone CPND configuration
CPND_LANG	(ROM) KAT	CPND language. Prompted when FTR = CPND. Roman CPND language Katakana CPND language
CUST	xx	Customer number associated with this function as defined in LD 15
DCNO	0-254	Digit Conversion table Number
DES	(NO) YES	Designator for Multiple Appearance DN's allowed Prompted when ODAS is equipped.
DFLN	5-(13)-27	Default character string Length Default to 13 or MXLN, whichever is less. Prompted when STAL = YES
DIG	0-2045 0-99 <cr>	Existing Dial Intercom Group number followed by member number To prompt DN If CPND Name already exists, an error message is returned. Prompted when DIG is equipped.
DISPLAY_FMT	(LAST) FIRST	Display format for CPND name Last name, First name (Doe, John) First name, Last name (John Doe)

Prompt	Response	Comment
DN	xxxx	Directory Number (Existing eligible DN or Partial DN). The DN can be up to 4 digits, up to 7 digits with Directory Number Expansion (DNXP) package 150. Valid DN types are Single or Multiple line prime DN, trunk DN, attendant DN or ACD DN. If Partial DN, all possible DNs are printed.
	x...x y...y	Range of DN-defined names are deleted/printed. This entry is valid when REQ = OUT/PRT.
	ALL	All names defined are deleted/printed. ALL is a valid entry when REQ = OUT/PRT.
	x/xx/xxx	DNs starting with x, xx, or xxx are printed. This entry is valid when REQ = PRT.
	<cr>	To re-prompt DCNO If the CPND name is already defined, an error message is returned.
HUNT	xxxx	Busy display mnemonic Default = B
IDC	0-254	Incoming DID Digit Conversion number
	ALL	Existing complete or partial IDC number All Names defined
LANG		Language choice for name for CPND screen and set display. Allowed only if REQ = OUT.
	(ROM)	English display (Roman characters)
	KAT	Non-English display (Katakana characters)
	ALL	Remove ALL names from CPND data block for the DN or DIG selected.
	<cr>	Roman (English) display
MXLN	5-(17)-27	Maximum allowable CPND character string Length Once an MXLN is entered, it cannot be changed to a lower value via the CHG prompt.

LD 95

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Prompt	Response	Comment
NAME	a...a <cr>	CPND Name using ASCII characters If STAL = YES, then Name size < XPLN If STAL = NO, then Name size = number of characters entered. DIG is reprompted. to DN prompt
NITC	(NI) aaaa	Non intercom call NITC indicates that an intercom call terminated as a normal call.
PAGE	(NO) YES	Page headers and numbers not printed if the Multiple DN/DIG is specified. Page headers and numbers printed if the Multiple DN/DIG is specified. Page headers (date and page number) are not printed if a single DN/DIG is specified.
PKUP	xxxx	Call Pickup display mnemonic. Default = P.
REQ	CHG END NEW OUT PRT	Request. Change existing data block Exit Overlay program Create CPND data blocks and/or name strings Remove existing name or data block Print an existing Name or data block from the data base
RESN	(NO) YES	Display of Reason for redirecting calls allowed
SHRT	(NO) YES	Prints one DN or IDC per single line. (long form) Prints several DNs or IDCs on a single line. (one-line form) Prompted when DN = ALL, Range or Partial DN to be specified.
STAL	(NO) YES	Static Allocation of Name storage In a Hotel/Motel environment with Background Terminal facilities, STAL must be YES. STAL = YES is recommended whenever CPND Names change frequently, for efficient use of available memory (i.e., when a guest checks in).
TYPE	CPND NAME	Type of data block CPND data block CPND Name data block Allowed only if CPND data block is already defined.

Prompt	Response	Comment
XFER	xxxx	Call Transfer display mnemonic Mnemonic for call transfer display in Network Call Redirection (NCRD). One to four characters are accepted. Default = T. Prompted if ISDN = YES in LD 15
XPLN	xx	Expected Length Range must be between the Input Name length and the MXLN, or it default to DFLN. This value should be set to a sufficient length to allow for current and future names to be entered. When REQ = NEW, the XPLN prompt defines the maximum name length for that particular entry. The XPLN for a DN cannot be changed without deleting that name entry.
	<cr>	This sets the XPLN to the input length, or DFLN whichever is greater. Re-prompts DIG. Prompted when STAL = YES

LD 96—D-channel Diagnostic

LD 96 is used to test and maintain D-channel links.

D-channels reside on T1 Multi-purpose Digital Interface (TMDI) cards. A set of LD 96 commands are provided to support TMDI cards. The TMDI commands listed in LD 48 can also be used in LD 96.

Monitoring

D-channel message monitoring is used to analyze the Layer 3 protocol messages traveling between the near and far-end D-channels.

Commands in LD 96 allow selective message monitoring based on

- the D-channel
- the B- or ISL channel
- the message types for a specific feature
- any specific message

The following sections describe the various command formats.

Note 1: During high traffic some of the monitored messages may be lost.

Note 2: For the D-channel monitor messages to be displayed, the system terminal must have USER defined as MTC in LD 17.

D-channels

All message types, features and channels associated with a particular D-channel can be monitored. Monitoring of multiple D-channels for both incoming and outgoing messages is allowed.

The LD 96 commands to enable or disable monitoring of all incoming or outgoing messages on a D-channel are:

ENL MSGI x—enable monitoring of incoming messages

ENL MSGO x—enable monitoring of outgoing messages

DIS MSGI x—disable monitoring of incoming messages

DIS MSGO x—disable monitoring of outgoing messages

Where x is the DCI device number. For example, to enable monitoring of incoming messages on D-channel 5, enter:

ENL MSGI 5

The output includes all messages, features and channels for D-channel 5.

B-channels and ISL channels

You can monitor up to 5 ISL or B-channels, for each direction. If there is no specific channel selected, all channels are monitored. The commands follow:

For B-channels on all systems:

```
ENL MSGI x CH loop channel
ENL MSGO x CH loop channel
DIS MSGI x CH loop channel
DIS MSGO x CH loop channel
```

Where:

```
ENL = enable monitoring
DIS = disable monitoring
MSGI = incoming messages
MSGO = outgoing messages
```

ISDN features

You can select specific ISDN applications, such as Network Ring Again, for message monitoring. Only one or all ISDN applications can be monitored per D-channel at one time. The LD 96 commands are listed below, where x is the D-channel device number.

ENL MSGI x FEAT feature

ENL MSGO x FEAT feature

DIS MSGI x FEAT feature

DIS MSGO x FEAT feature

Where “feature” can be:

NCT = Network Call Trace

TAT = Trunk Anti-Tromboning

Message types

You can select specific types of messages to be monitored on a D-channel. The LD 96 commands are listed below, where **x** is the D-channel device number.

```
ENL MSGI x MSG msg1 msg2 msg3
ENL MSGO x MSG msg1 msg2 msg3
DIS MSGI x MSG msg1 msg2 msg3
DIS MSGO x MSG msg1 msg2 msg3
```

Up to three message types (msg1, msg2, msg3) can be entered per command. The default is “ALL”, which is all message types except SVC and SVCA. The message types are:

- 1** ALER = alerting
- 2** ALL = all primitives and all messages except SVC and SVCA
- 3** CAPR = call proceeding
- 4** CON = connect
- 5** CONA = connect ack
- 6** DISC = disconnect
- 7** FAC = facility
- 8** FACA = facility ack
- 9** FACR = facility reject
- 10** INFO = information
- 11** NOTF = notify
- 12** PRIM = all primitives (such as release indication)
- 13** PROC = call proceeding
- 14** PROG = progress
- 15** RLS = release
- 16** RLSC = release complete
- 17** RST = restart
- 18** RSTA = restart ack
- 19** STAT = status
- 20** STEN = status enquiry
- 21** STP = setup
- 22** STPA = setup ack
- 23** SVC = service
- 24** SVCA = service ack
- 25** UI = user information

Setting output format levels

There are three levels (0-2) of message decoding. The level determines the format of the data output to the system terminal. To set the output level enter the following.

```
SET MSGI x MON (0)-2
SET MSGO x MON (0)-2
```

Level 0 outputs the message as shown below.

DCH x y MSG msgtype REF xxxxxxxx CH zzzz TOD hh:mm:ss <more data>

Where:

x = D-channel number
y = "I" for incoming messages, "O" for outgoing messages
xxxxxxx = the call reference number
zzzz = the loop and channel number (or TN for ISL channels)

<more data> = additional lines of information, such as:

- 1 CALLED # = called number
- 2 CALLING # = calling number of originator
- 3 CAUSE = reason for action taken (e.g, unassigned number)
- 4 CONNECT # = connected number
- 5 FEAT = feature (such as Network Ring Again)
- 6 NUM PLAN = Numbering plan used (such as private)
- 7 PROGRESS = call progress description
- 8 REDIR REASON = reason the call was re-directed
- 9 REDN # = call redirection number
- 10 STATE = call state
- 11 STATUS = channel status
- 12 TYPE = type of channel

Level 1 outputs the raw data.

The format is:

DCH x y MSG msgtype REF xxxxxxxx TN zzzzzz CH# x CK x
<more data in hexadecimal>

Level 2 output identifies the individual Information Elements (IE) in the messages and their hexadecimal values. The possible IEs are:

- 1 BCAP = bearer capability
- 2 CAST = call state
- 3 CHGA = charge advice
- 4 CHID = channel ID
- 5 CHST = change status
- 6 CLED = called number
- 7 CLES = called party subaddress
- 8 CLNG = calling number
- 9 CLNS = calling party subaddress
- 10 CNS5 = codeset 5 connected number subaddress
- 11 CON# = connect number
- 12 CON5 = codeset 5 connected number
- 13 CSE = cause
- 14 DES6 = codeset 6 Destination IE
- 15 DISP = display
- 16 FAC = facility IE for codeset 0
- 17 FAC6 = codeset 6 facility IE
- 18 FIND = feature Indication
- 19 HLYR = higher layer compatibility
- 20 INFO = information request
- 21 KYPD = keypad
- 22 LLYR = low layer compatibility
- 23 LS5 = locking Shift to codeset 5
- 24 LS6 = locking shift to codeset 6
- 25 LS7 = locking Shift to codeset 7
- 26 NLS5 = codeset 5 non-locking shift
- 27 NLS6 = codeset 6 non-locking shift
- 28 NLSO = non-locking shift to codeset 0

LD 96

- 29 NOTI = notify indicator
- 30 NSF = network specific facility
- 31 ORG# = originating called number
- 32 ORG6 = codeset 6 Originating IE
- 33 PROG = progress indicator
- 34 RDG6 = codeset 6 redirecting number
- 35 REDG = redirecting number
- 36 REDN = redirection number
- 37 RETR = codeset 6 reason for return
- 38 RSTI = restart indicator
- 39 SHFT = shift
- 40 SIGN = signal
- 41 TACG = codeset 6 TTC advice charge
- 42 TNS = transit network selection
- 43 UNKN = unknown
- 44 UUI = user-user information

Deactivate monitor from a maintenance telephone

Once the system has been tied up or flooded with the monitored messages, it is very difficult, if not impossible, to use LD 96 to disable the monitors. In this case, a maintenance telephone with MTA Class of Service can be used to deactivate the monitor.

To activate or deactivate the monitor from a maintenance telephone, simply dial: SPRE 9913 x 01

Where:

SPRE = special function access code (defined in LD 15)

9913 = feature code to activate or deactivate the monitor

x = 0 to deactivate, 1 to activate

01 = DCH monitor ID

Note 1: Dial tone is provided if successful.

Note 2: Use “RST MON” to reactivate the monitor from LD 96.

Note 3: Deactivating the monitor by the maintenance telephone does not disable the monitor, but simply halts the output. If the monitor is deactivated and not disabled using the DIS MSGI and DIS MSGO commands, then the monitor becomes re-activated after a datadump and sysload.

Get monitor status

To determine the current status of the D-channel monitor, enter the following command, where x is the D-channel (DCHI or TMDI) port number.

STAT MON x

Output format:

***DCH MSGI x LEVEL y ACTV (where, y = format level)

MSG - msg1 msg2. . .

FEAT - feat

CH - loop channel (or l s c u for ISL)

***DCH MSGO x LEVEL y ACTV

MSG - msg1 msg2. . .

FEAT - feat

CH - loop channel (or l s c u for ISL)

If the monitor had been deactivated by the maintenance telephone, INACTV is output instead of ACTV.

T1 Multi-purpose Digital Interface (TMDI)

The TMDI provides 2 ports for ISDN Primary Rate D-channel (DCH) and 1.5 Mb/s Digital Trunk Interface (DTI).

The TMDI commands are listed below, x is the TMDI card number (defined by prompt DLOP in LD 17).

DIS TMDI x (ALL)—Disable TMDI card

ENL TMDI x (FDL, ALL)—Enable TMDI card

RST TMDI x—Reset

STAT TMDI (x) (FULL)—Get TMDI status

SLFT TMDI x—Execute a self-test on x

These commands are also provided in Input/Output Diagnostic (LD 37) and Link Diagnostic (LD 48) and LD 42.

D-channel commands

The following commands are used to enable, disable, test and get the status of a D-channel. Refer to the LD 96 introduction for details on the use of these commands.

DIS AUTO x	Disable automatic recovery for DCH x
DIS DCH x	Disable DCH x
DIS MSGI x (options)	Disable the monitoring of incoming messages on D-channel x
DIS MSGI x FEAT y	Disable incoming monitoring for feature y messages on D Channel x. (See page 784 for feature choices)
DIS MSGO x (options)	Disable the monitoring of outgoing messages on D-channel x
DIS MSGO x FEAT y	Disable outgoing monitoring for feature y messages on D Channel x. (See page 784 for feature choices)
DIS SERV x	Disable service messages on D-channel x
DLIF DCH x	Force download of D channel x (For PRI UIPE application)
ENL AUTO x	Enable automatic recovery for DCH x
ENL DCH x (FDL)	Enable DCH x and attempt to establish the link, and force download to TMDI
ENL MSGI x (options)	Enable the monitoring of incoming messages on D-channel x
ENL MSGI x FEAT y	Enable incoming monitoring for feature y messages on D Channel x.
ENL MSGO x (options)	Enable the monitoring of outgoing messages on D-channel x
ENL MSGO x FEAT y	Enable outgoing monitoring for feature y messages on D Channel x.
ENL SERV x	Enable service messages on D-channel x
EST DCH x	Establish multiple frame operation on D-channel x
FDIS NCAL <DCH#> <conn_ID>	Force disconnect the specified call-independent connection
PLOG DCH x	Print protocol error log on DCH x
RLS DCH x	Release D-channel x
RST DCH x	Reset D-channel x, inhibit signaling
RST MON	Reset or reactivate monitoring on D-channels with enabled monitors
SDCH DCH x	Switch to the standby D-channel x
SET MSGI x MON (0)-2	Set monitor output format level for incoming messages on D-channel x

SET MSGO x MON (0)-2	Set monitor output format level for outgoing messages on D-channel x
STAT DCH (x)	Get status of one or all D-channels
STAT NCAL <DCH#>	List all current call-independent connections on a given PRI D-channel.
STAT NCAL <DCH#> <conn_ID>	List information pertaining to a specific call-independent connection
STAT MON (x)	Display the incoming and outgoing monitoring status of one or all D-channels.
STAT SERV (x)	Get the enable/disable status of services messages for one or all D-channels

T1 Multi-purpose Digital Interface (TMDI) commands

The TMDI commands are listed below, **x** is the TMDI device number (defined by prompt DLOP in LD 17). These commands are also provided in Input/Output Diagnostic (LD 37) and Link Diagnostic (LD 48) and LD 42.

DIS TMDI x (ALL)	Disable TMDI card x
DIS TMDI x u	Disable TMDI card x unit u
ENL TMDI x (ALL, FDL)	Enable TMDI card x
ENL TMDI x u	Enable TMDI card x unit u
RST TMDI x	Reset TMDI x
SLFT TMDI x	Invoke self-test
STAT TMDI (x [FULL])	Get TMDI status

T1 Multipurpose Digital Interface commands

The following commands are only available for D-channels on an TMDI port.

DIS LLB x	Disable local loop back mode on TMDI DCH x
DIS RLB x	Disable remote loop back mode on TMDI DCH x
DIS TEST x	Disable TEST mode on TMDI DCH x
DLIF DCH xx FDL	Force download a PRI interface table.
ENL LLB x	Enable local loop back mode on TMDI DCH x
ENL RLB x	Enable remote loop back mode on TMDI DCH x
ENL TEST x	Enable TEST mode on TMDI DCH x
MAP DCH x	Get physical address and switch settings for D-channels
PCON DCH x	Print configuration parameters on TMDI DCH x
PMES DCH x	Print incoming layer 3 messages on TMDI DCH x
PTRF DCH x	Print traffic report on TMDI DCH TMDI
PTRF DCH x	Print traffic report on TMDI DCH x
TEST LLB x	Start local loop back test on TMDI DCH x
TEST RLB x	Start remote loop back test on TMDI DCH x

Alphabetical list of commands

Command	Description
DIS AUTO x	Disable automatic recovery for DCH x
DIS DCH x	Disable DCH x. This changes the status of the DCH to DSBL and the status of the D-channel to DCH RST (reset).
DIS LLB x	Disable local loop back mode on TMDI DCH x. See “ENL TEST” command for details.
DIS MSGI x	Disable the monitoring of all incoming messages from D-channel x.
DIS MSGI x (options)	Disable the monitoring of all incoming messages from D-channel x. The available options are: 1. CH loop channel: disable incoming messages on B-channel loop channel 2. CH l s c u: disable incoming messages on ISL-channel loop shelf card unit 3. FEAT feature: disable incoming messages for a PRI feature 4. MSG msg1 msg2 msg3: disable incoming message types Refer to the LD 96 introduction for details.
DIS MSGI x FEAT y	Disable incoming monitoring for messages on D Channel x.
DIS MSGO x	Disable the monitoring of outgoing messages from D-channel x.
DIS MSGO x (options)	Disable the monitoring of outgoing messages from D-channel x. Refer to DIS MSGI x (options) for the list of options.
DIS MSGO x FEAT y	Disable outgoing monitoring for messages on D Channel x.

DIS RLB x	Disable remote loop back mode on TMDI DCH x. See “ENL TEST” command for details.
DIS SERV x	Disable service messages on D-channel x. See “ENL SERV” for details. The D-channel must be disabled before disabling service messages.
DIS TEST x	Disable TEST mode on TMDI DCH x. See “ENL TEST” command for details. When the test mode state is disabled, the DCH link will go back to release state and the DCH background audit will then try to establish the link.
DIS TMDI x u	Disable TMDI card x unit u
DLIF DCH x	Force download of D channel x (For PRI UIPE application). Note that : 1. D channel specified must use the UIPE application 2. D channel must be disabled 3. D channels configured on the same TMDI card using the same interface must be disabled
DLIF DCH xx FDL	Force download a PRI interface table. To download the ISDN interface cable: 1. the D channel must be disabled 2. the UIPE application must be active 3. other D channels on the same TMDI card must be disabled
DWNL DCHI x (t)	Down load layer 3 message configuration table t and LAPD parameters from DCHI x. If table t is not specified, all table information is shown. This command is intended as a debugging tool for system designers.
ENL AUTO x	Enable automatic recovery for DCH x. Automatic recovery is initially enabled.
ENL DCH x (FDL)	

Enable DCH x and attempt to establish the link, and force download to TMDI. A self-test on the DCH runs automatically. If successful, then:

DCHI status: OPER
DCH status: EST

If this is not successful, then:

DCHI status: OPER
DCH status: RLS

FDL forces D-channel loadware to the TMDI card. This is optional.

ENL LLB x Enable local loop back mode on TMDI DCH x. See “ENL TEST” command for details.

ENL MSGI x Enable the monitoring of all incoming messages from D-channel x.

ENL MSGI x (options) Enable the monitoring of all incoming messages from D-channel x. Refer to DIS MSGI x (options) for the list of options.

ENL MSGI x FEAT y Enable incoming monitoring for messages on D Channel x.

ENL MSGO x Enable the monitoring of all outgoing messages for D-channel x.

ENL MSGO x (options) Enable the monitoring of all outgoing messages for D-channel x. Refer to DIS MSGI x (options) for the list of options.

ENL MSGO x FEAT y Enable outgoing monitoring for messages on D Channel x.

ENL RLB x Enable remote loop back mode on TMDI DCH x. See “ENL TEST” command for details.

ENL SERV x Enable service messages on D-channel x.

“Service” and “Service Acknowledge” messages are supported on individual PRA B channels, ISL channels and D-channels. They are used to coordinate channel status between the near and far end. A channel status can be in service, maintenance or out-of-service.

The primary and backup D-channel must be disabled before enabling service messages.

Make sure both ends support service messages before using this command. For Meridian 1/Meridian SL-1 to Meridian 1 / Meridian SL-1, both systems must have X11 Release 15 or higher or X27.

By default, SERV is disabled when the interface type is Meridian 1/Meridian SL-1 (LD 17 IFC = SL1).

When enabled, service messages are supported on individual PRA B-channels, ISL channels and D-channels. When disabled, service messages are provided automatically on D-channels with Backup D-channel configured.

For Meridian 1/Meridian SL-1 to DMS, or Meridian 1/Meridian SL-1 to AT&T only service messages on individual PRA B-channels and ISL channels are supported.

By default, SERV is disabled when the interface type is DMS (LD 17), and enabled when the interface type is AT&T (LD 17 IFC = ESS4/ESS5).

ENL TEST x Enable TEST mode on TMDI DCH x.

The DCH is put into TEST mode to perform the local loop back (LLB) or remote loop back (RLB) test. The DCH link can only be put in test mode if it is in the release or established state. If the link is in establish state, the DCH link is first released, and then put in test mode.

The local loop back test first tests the expedited interface, then the ring interface. The test consists of sending a data packet through each interface, which in turn is sent back by Layer 2.

This data packet is then validated to ensure that the contents of the data packet are the same that were originally sent.

Example:

```
ENL TEST x enter TEST mode
ENL LLB x enter local loop back mode
TEST LLB x perform test (results are PASS or FAIL)
DIS LLB x exit local loop back mode
DIS TEST x exit TEST mode and restore link
```

The remote loopback test is used to verify the integrity of the physical link. This following test is only supported if both the D channels are on the TMDI card. To run the test the far-end must be in the remote loopback mode (ENL RLB x). The DCH running the test (near-end) must be in TEST mode.

Example:

Far-end:

```
ENL TEST x — enter TEST mode
ENL RLB x — enter remote loopback mode
DIS RLB x — exit remote loopback mode (after test)
DIS TEST x — exit TEST mode and restore link
```

Near-end:

```
ENL TEST x — enter TEST mode
TEST RLB x — perform test (results are PASS or FAIL)
DIS TEST x — exit TEST mode and restore link
```

If the far end is not an TMDI D-channel, use the RLBK command in LD60 to set up the remote loopback test.

ENL TMDI x u Enable TMDI card x unit u

- EST DCH x** Establish multiple frame operation on D-channel x.
- With the absence of the back-up D-channel, issuing the EST DCH x command clears all the B-channels on loop x. If backup D-channel is available, the system switches to the backup D-channel and the B-channels of loop x are not cleared.
- FDIS NCAL <DCH#> <conn_id>**
- Force disconnect the specified call-independent connection as defined by its connection ID number. The connection ID number is a number in the range of 1-9999 that identifies the call independent connection on a given DCH.
- MAP DCH x** Get physical address and switch settings for D-channels. This command outputs the card name and switch settings for D-channels. For example:
- ```
MAP DCH
DCH 15 DCHI 07
DCH 23 TMDI 09 PORT 2
```
- PCON DCH x**      Print configuration parameters on TMDI DCH x. This command outputs the parameters originally downloaded when the D-channel was enabled. The output format is:
- ```
DCH : x    LINK PARAM CONFIRM TIME: hh:mm:ss

TMDI x = 0-15
PORT x = 0-3
INTERFACE aaa = SL1, D100, D250, ESS4, S100, etc.
OPER MODE aaa bbb ccc ddd eee
```
- Where:** aaa = RS422, RS232 ; bbb = DTE, DCE ; ccc = USR, NET ; ddd = baud rate ; eee = clock (EXT or INT CLK)
- ```
T200 xx (LAPD parameter)
T203 xx (LAPD parameter)
T200 xx (LAPD parameter)
N201 xx (LAPD parameter)
K xx (LAPD parameter)
N2X4 xx (LAPD parameter if INTERFACE is ITR6)
```
- PLOG DCH x**      Print protocol error log-on DCH x.
- Protocol errors can be the result of PRI transmission problems and re-start procedures, or a protocol mismatch with the far end. The PLOG counters are cleared after the PLOG is printed or the DCH card is enabled.

When a protocol counter overflows, the PLOG is printed automatically and the counters are cleared. The counter is also cleared when the D-channel is disabled.

Response for TMDI DCH is:

```
DCH : xx MAINT CONFIRM TIME: hh:mm:ss
01 cc
11 cc
23 cc
```

Where:

- x = DCH number
- xxxx = system real time (in hexadecimal)
- yy = maintenance indication primitive
- zz = maintenance indication task ID
- 01 02 03 . . . 16 = protocol error counters as listed below
- cc = protocol error counts

Only the non-zero counters are output. Protocol error counters:

- 01 = Count of missing PRI handshakes
- 02 = Count of peer initiated re-establishment link
- 03 = Count of unsuccessful retransmit N200 of SABME
- 04 = Count of unsuccessful retransmit N200 of DISC
- 05 = Count of N(R) errors
- 06 = Count of I fields with length greater than N201
- 07 = Count of undefined frames
- 08 = Count of I fields but not allowed
- 09 = Count of FRMR frames
  
- 10 = Count of CRC error frames
- 11 = Count of REJ frames
- 12 = Count of messages with less than 4 octets
- 13 = Count of undefined protocol discriminators
- 14 = Count of undefined message types
- 15 = Count of messages missing mandatory information elements
- 16 = Count of messages with undefined information elements



17 = Count of layer 1 reports of no external clock being received  
18 = Count of aborted frames  
19 = Count of SABME frames received with incorrect C/R bit

20 = Count of supervisory frames received with F = 1  
21 = Count of unsolicited DM responses with F = 1  
22 = Count of unsolicited UA responses with F = 1  
23 = Count of unsolicited UA responses with F = 0  
24 = Count of DM responses with F = 0  
25 = Number of times that no response was received from the far end after N200 retransmissions of RR or RNR  
26 = Count of frames received with incorrect header length  
27 = Number of times owner receiver busy condition was entered  
28 = Number of times peer receiver busy condition was entered  
29 = Count of messages with call reference length greater than 2

30 = Count of optional IEs received with invalid contents  
31 = Count of mandatory IEs received with invalid contents  
32 = Count of messages received with IE's not ordered correctly  
33 = Count of IEs which were repeated in received messages, but are only allowed to appear once per message  
34 = Count of IEs received with length exceeding the specified maximum length for the IE  
35 = Count of layer 3 messages from far-end with invalid call reference flag value of 0.  
36 = Count of layer 3 messages from far-end with invalid call reference flag value of 1.  
37 = Count of layer 3 messages from far-end with invalid global call reference.  
38 = Count of layer 3 messages from SL-1 that are too short.  
39 = Count of layer 3 messages from SL-1 containing an undefined message type.

40 = Count of layer 3 messages from SL-1 missing mandatory IE(s).  
 41 = Count of layer 3 messages from SL-1 containing unsupported IE(s).  
 42 = Count of layer 3 messages from SL-1 containing invalid operational IE(s).  
 43 = Count of layer 3 messages from SL-1 containing invalid mandatory IE(s).  
 44 = Count of layer 3 messages from SL-1 with IE(s) out of order.  
 45 = Count of layer 3 messages from SL-1 containing repeated IE(s).  
 46 = Count of layer 3 messages from far-end with an invalid call reference length.  
 47 = Count of layer 3 messages from SL-1 with an invalid call reference flag value of 0.  
 48 = Count of layer 3 messages from SL-1 with an invalid call reference flag value of 1.  
 49 = Count of layer 3 messages from SL-1 with an invalid global call reference.

50 = Count of unexpected layer 3 messages received from the far-end.  
 51 = Count of unexpected layer 3 messages received from the SL-1.  
 52 = Count of unexpected layer 3 timer expirations.  
 53 = Count of protocol messages received when D-channel is not in service or waiting for a Service Acknowledge message.

PMES DCH x     Print incoming layer 3 messages on TMDI DCH x.

The following data is kept by the TMDI DCH loadware and output when requested by this command or when one of the counters overflows:

DCH : xx  
 MSG LOG CONFIRM TIME: hh:mm:ss

SETUP:            yy

CONNECT:        yy

ALERT:           yy

(Only non-zero counters are reported) (Where yy is the number of times a message was received)

When a counter overflows, the log is printed automatically and the counters are cleared. The counter is also cleared when the D-channel is disabled.

#### PTAB DCH x (t)

Display layer 3 message configuration table t and LAPD parameters from DCH x. This command is intended as a debugging tool for system designers.

#### PTRF DCH x

Print traffic report on TMDI DCH x.

The following traffic information is output:

1. `PEAK_I_US xx %` = peak incoming usage on the DCH link
2. `AVRG_I_US xx %` = average incoming usage on the DCH link
3. `PEAK_O_US xx %` = peak outgoing usage on the DCH link
4. `AVRG_O_US xx %` = average outgoing usage on the DCH link
5. `TIME xx` = time in seconds
6. `CONNECTED CALLS xx:` = total number of established call-independent connections

#### RLS DCH x

Release D-channel x. The link is in a waiting state, ready to come back up at any time.

If you release the D-channel with active B-channels, then calls in progress are not affected. However, these calls are disconnected when you re-establish the D-channel.

When the automatic recovery feature is active, the B-channels are automatically re-established

#### RST DCH x

Reset D-channel x, inhibit signaling. Forces the link to reset (RST) state, but does not disable PRI or DCH

#### RST MON

Reset or reactivate monitoring on D-channels with enabled monitors.

- SDCH DCH x**     Switch to the standby D-channel x. This is only valid in a backup D-channel configuration.
- Releases a D-channel and switches over to the other D-channel as long as the other D-channel is in EST STBY, established standby mode.
- Where x is the standby D-channel number. This command changes the status of the active D-channel to standby, and changes the status of standby D-channel to active.
- This command is not applicable if the recovery to primary D-channel option (prompt RCVP = YES in LD 17) is used.
- This command is only applicable to Meridian 1/Meridian SL-1 to Meridian 1/Meridian SL-1 Backup D-channel interface (IFC = SL-1 in LD 17).
- 
- SET MSGI x MON (0)-2**
- Set monitor output format level for all incoming messages on D-channel x. Refer to Setting output format levels earlier in the section.
- 
- SET MSGO x MON (0) -2**
- Set monitor output format level for all outgoing messages on D-channel x. Refer to Setting output format levels earlier in the section.
- 
- STAT DCH x**     Get the present status of D-channel x, where x is the I/O port number (entering x to specify just one link is optional).
- DCH status may be:
- EST = DCH link is established
  - EST STBY = DCH link is established and is the standby
  - FAIL = DCH link has failed
  - RLS = DCH link is released
  - RST = DCH link is in reset state
  - AEST, ARLS, REST = these codes indicate intermediate background functions are being performed. Enter the STAT command again to determine final status.
- 
- STAT DCH (x)**     Get status of one or all D-channels.
- If a DCH number is not entered, the status of all D-channels is output. The output format is:
- DCH x : aaaa bbbb cccc dddd x

**Where:**

x = DCH number  
aaaa = application status  
bbbb = link status  
cccc = AUTO if autorecovery is enable  
dddd = BKUP x or PRIM x (associated primary or backup DCH)

**Application status (aaaa):**

APRI = Awaiting PRI response  
CPRI = Checking PRI  
DIAG = application has failed  
DSBL = application is disabled  
OPER = link is operational  
RST = application is in reset state  
SDCH = Setting D-channel

**Link status (bbbb):**

AEST = Awaiting establishment  
ARLS = Awaiting release  
EST ACTV = DCH link is established and active  
EST STBY = DCH link is established and is the standby  
FAIL = DCH link has failed  
REST = request establishment  
RLS = DCH link is released  
RST = DCH link is in reset state  
TST = Test mode

STAT MON (x)    Display the incoming and outgoing monitoring status of one or all D-channels.

**STAT NCAL <DCH#>**

List all current call-independent connections on a given PRI D-channel.

The response format is as follows:

NCAL CONN\_ID: The connection ID number is a number in the range of 1-9999 that identifies the call independent connection on a given DCH.

CREF: call reference number in HEX identifying independent connection

STATE: current state of all call-independent connections (IDLE, CONN\_REQ, CONN\_EST)

TIME: year month day hour:minute:second (the time when call independent connection request is made)

APPL: applications using the call-independent connection (eg. NACD, NMS, ...)

ORIG: originator

DEST: destination

**STAT NCAL <DCH#> <conn\_ID>**

List information pertaining to a specific call-independent connection as defined by its connection ID number.

The response format is as follows:

NCAL CONN\_ID: The connection ID number is a number in the range of 1-9999 that identifies the call independent connection on a given DCH.

CREF: call reference number in HEX identifying independent connection

STATE: current state of all call-independent connections (IDLE, CONN\_REQ, CONN\_EST)

TIME: year month day hour:minute:second (the time when call independent connection request is made)

APPL: applications using the call-independent connection (eg. NACD, NMS, ...)

ORIG: originator

DEST: destination

**STAT SERV (x)**    Get the enable/disable status of services messages for one or all D-channels. See "ENL SERV" for details.

**TEST LLB x**        Start local loop back test on TMDI DCH x. See "ENL TEST" command for details.

**TEST RLB x**        Start remote loop back test on TMDI DCH x. See "ENL TEST" command for details.

---

---

## LD 97—Configuration Record 2

---

Overlay program 97 is used to specify several system parameters for XPE and other related equipment. These parameters include the minimum flash timing to download to the XPE packs when required.

Loss and Level Plan information may also be specified. Refer to the *International Loss and Level Plan planning and engineering* NTP for information regarding Loss and Level Plans prior to making any changes to the parameters defined in this Overlay.

## Prompts and responses

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---

**SUPL: Superloop parameters data block**

| Prompt | Response | Comment                                          |
|--------|----------|--------------------------------------------------|
| REQ    | aaa      | Request (CHG, END, PRT)                          |
| TYPE   | SUPL     | Type = SUPL (Superloop)                          |
| SUPL   | 0-156    | Superloop number in multiples of 4               |
| XPE0   | x y z    | Extended Peripheral Equipment controller 0 (STD) |
| XPE1   | x y z    | Extended Peripheral Equipment controller 1 (STD) |

---

**SYSM: System Parameters for MSDL/MISP card**

| Prompt | Response    | Comment                                             |
|--------|-------------|-----------------------------------------------------|
| REQ    | aaa         | Req = CHG or PRT                                    |
| TYPE   | SYSM        | Type = SYSM (System parameters for MSDL/MISP cards) |
| FDLC   | p1 p2 p3 p4 | Fast Download Control parameters                    |

---

## SYSP: System parameters for Peripheral Equipment

| Prompt | Response    | Comment                                                  |
|--------|-------------|----------------------------------------------------------|
| REQ    | aaa         | Req = CHG or PRT                                         |
| TYPE   | SYSP        | Type = SYSP (System parameters for Peripheral equipment) |
| INTN   | (NO) YES    | International companding law                             |
| CODE   | (0)-3       | Quite Code is used by Network Card firmware              |
| CONT   | 1-(4)-32767 | Continuity                                               |
| CRCF   | 1-(4)-32767 | Cyclic Redundancy Check (CRC) Failures                   |
| FLSH   | (120)-168   | Flash timing                                             |
| P10R   | (50)-70     | Pulse 10 Ratio                                           |
| P12R   | (50)-70     | Pulse 12 Ratio                                           |
| P20R   | (50)-70     | Pulse 20 Ratio                                           |
| FDLC   | p1 p2 p3 p4 | Fast Download Control parameters                         |

## XCTP: Conference/TDS/MF Sender card parameters data block

| Prompt | Response   | Comment                                                |
|--------|------------|--------------------------------------------------------|
| REQ    | aaa        | Request (CHG, END, PRT)                                |
| TYPE   | XCTP       | Type = XCTP (Conference/TDS/MF Sender card parameters) |
| CPAD   | x          | Conference PAD (x = (0) or 1)                          |
| DTMF   | 0-(14)-255 | Dual Tone Multifrequency                               |
| P10P   | 0-(30)-255 | Primary 10 Pulses per second                           |
| S10P   | 0-(31)-255 | Secondary 10 Pulses per second                         |
| 20PP   | 0-(32)-255 | 20 Pulses Per second                                   |

## XPE: Extended Peripheral Equipment shelf data block

| Prompt | Response | Comment                                            |
|--------|----------|----------------------------------------------------|
| REQ    | aaa      | Request (aaa = CHG, END, PRT)                      |
| TYPE   | XPE      | Type = XPE (Extended Peripheral Equipment shelves) |
| XPEC   | (0)-95   | Extended Peripheral Equipment Controller           |
| LOC    | xxxxxx   | Location code for Peripheral Controller            |
| MED    | (COP)    | Connection Media to Peripheral Controller          |
| RGTP   | x        | Ringin Generator Type (x = (8) or 16)              |

## Print information on Superloop or Extended PE shelves

| Prompt | Response | Comment                                  |
|--------|----------|------------------------------------------|
| REQ    | PRT      | Req = PRT                                |
| TYPE   | aaaa     | Type = SUPL or XPE                       |
| SUPL   | 0-156    | Superloop number in multiples of 4       |
| XPE    | 1-95     | Extended Peripheral Equipment controller |

## Alphabetical list of prompts

| Prompt | Response    | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20PP   | 0-(32)-255  | 20 Pulses Per second<br>Tone table index for primary 20 pulses per second (pps) digit set. Use 32 for North American tones. Tone tables are defined in LD 56.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CODE   | (0)         | Quite Code is used by Network Card firmware<br>0 is the only valid entry. Entries 1-3 are for future use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CONT   | 1-(4)-32767 | Continuity. Maintenance threshold for number of continuity faults per timeslot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| CPAD   | (0)<br>1    | Conference PAD<br>Use software PAD values<br>Use PAD values defined by switch settings on pack (NT8D17). The CNFC command in LD 38 will not do the attenuation testing when CPAD = 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CRCF   | 1-(4)-32767 | Cyclic Redundancy Check (CRC) Failures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DTMF   | 0-(14)-255  | Dual Tone Multifrequency (Tone table index of the first DTMF digit to be used). Use 14 for North American tones.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| FDLC   | p1 p2 p3 p4 | Fast Download Control parameters. Where <b>p1</b> can be: <ol style="list-style-type: none"> <li>1. (ALL) = All cards listed below</li> <li>2. DCH = D-Channel cards</li> <li>3. MSDL = Multipurpose Serial Data Link cards</li> <li>4. PRIE = Primary Rate Interface Universal ISDN Protocol Engine</li> <li>5. T1E1 = T1/E1 Multipurpose Digital Interface cards</li> <li>6. DITI = Digital Trunk Interface</li> </ol> Where <b>p2</b> can be: <ol style="list-style-type: none"> <li>1. (C) = Conditional download (only if there is a major fault in the firmware or after a power failure). "C" is the recommended setting.</li> <li>2. F = Force download after initialization. Entering "F" only applies to the first INIT following the entry. After the INIT, the system reverts to C (conditional).</li> </ol> |

| Prompt | Response    | Comment                                                                                                                                                                                                                                                                                                                                                    |
|--------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        |             | <p>Where <b>p3</b> can be:</p> <ol style="list-style-type: none"> <li>1. (C) = Current version</li> <li>2. L = Latest version</li> <li>3. S = Specified version</li> </ol> <p>Where <b>p4</b> is :</p> <ul style="list-style-type: none"> <li>• xx (version number, if p3 = S).</li> </ul> <p>See LD 20-22 to print versions.</p>                          |
| FLSH   |             | Flash timing                                                                                                                                                                                                                                                                                                                                               |
|        | (120)-768   | <p>Switchhook Flash timing</p> <p>Establishes Switchhook Flash time in milliseconds for 500/2500 sets</p>                                                                                                                                                                                                                                                  |
| INTN   | (NO)<br>YES | <p>μ- International companding Law</p> <p>A- International companding Law</p>                                                                                                                                                                                                                                                                              |
| LOC    | xxxxxx      | <p>Location code for Peripheral Controller (0-6 characters)</p> <p>Should be equal to the column number assigned to the System Monitor and the Universal Equipment Module (UEM) that contains the Controller.</p> <p>For example: CxxMy</p> <p>Where:</p> <ul style="list-style-type: none"> <li>• xx = column number</li> <li>• y = UEM number</li> </ul> |
| MED    | (COP)       | Connection Media to Peripheral Controller (copper cabling)                                                                                                                                                                                                                                                                                                 |
| P10P   | 0-(30)-255  | <p>Primary 10 Pulses per second</p> <p>Tone table index for primary 10 pulses per second (pps) digit set. Use 30 for North American tones.</p>                                                                                                                                                                                                             |
| P10R   | (50)-70     | <p>Pulse 10 Ratio (make-break ratio for 10 PPS dial pulse dialing)</p> <p>Range is 50% to 70%, in steps of 1. For example, at 70% the signal is on for 30 ms and off for 70 ms producing the 100 ms cycle for one pulse.</p>                                                                                                                               |

# LD 97

| Prompt | Response          | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P12R   | (50)-70           | Pulse 12 Ratio (make-break ratio for 12 PPS dial pulse dialing)<br><br>Range is 50% to 70%, in steps of 1. For example, at 70% the signal is on for 30 ms and off for 70 ms producing the 100 ms cycle for one pulse.                                                                                                                                                                                                                                                                                                                                                  |
| P20R   | (50)-70           | Pulse 20 Ratio (make-break ratio for 20 PPS dial pulse dialing)<br><br>Range is 50% to 70%, in steps of 1. For example, at 70% the signal is on for 15 ms and off for 35 ms producing the 50 ms cycle for one pulse.                                                                                                                                                                                                                                                                                                                                                   |
| REQ    | CHG<br>END<br>PRT | Request<br>Modify existing data<br>Exit overlay<br>Print data block                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| RGTP   | (8) 16            | Ring Generator Type (8 or 16 concurrent ringers; 16 requires NT6D42CA Ringing Generator). This prompt determines the maximum number of 500/2500 telephones which can be in the active ringing state at the same time.<br><br>CAUTION: Do not set RGTP = 16 if you do not have the NT6D42 ringing generator. Exceeding the ringer capacity may cause intermittent overload alarms on the ringing generator.<br><br>The value is not passed to the Peripheral Controller card immediately after service change. That information is downloaded when the card is enabled. |
| S10P   | 0-(31)-255        | Secondary 10 Pulses per second<br><br>Tone table index for secondary 10 pulses per second (pps) digit set. Use 31 for North American tones. Tone tables are defined in LD 56.                                                                                                                                                                                                                                                                                                                                                                                          |
| SLOT   | (L) R             | Network Card is in Left or Right slot<br><br>Enter L (left) if the Network Card is located in the lower numbered network pair. For example, in superloop 0, enter L if the Network Card sits in the slot for network loops 0/1, enter R (right) for 2/3.                                                                                                                                                                                                                                                                                                               |
| SUPL   | 0-156<br>N0-N156  | Superloop number in multiples of 4<br>Precede loop number with N to create a phantom loop                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Prompt | Response | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TYPE   |          | Type of data block<br><br>When modifying PE system parameters, the system must initialize for the changes to come into effect. The loop number for the Conference/TDS/MFS card is defined by prompt XCT in LD 17.                                                                                                                                                                                                                                                                                      |
|        | SYSM     | System parameters for MSDL/MISP cards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|        | SYSP     | System parameters. When modifying the PE system parameters, the system must initialize for the changes to come into effect.                                                                                                                                                                                                                                                                                                                                                                            |
|        | SUPL     | Superloop parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|        | XCTP     | Conference/TDS/MF Sender card parameters. The loop number for the NT8D17 Conference/TDS/MFS card is defined by prompt XCT in LD 17.                                                                                                                                                                                                                                                                                                                                                                    |
|        | XNPD     | Extended Network/Digitone Receiver (Release 21 and earlier)                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|        | XPE      | Extended Peripheral Equipment shelves                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| XPE0   | x y z    | Extended Peripheral Equipment controller 0<br>Peripheral Controller number, starting segment and ending segment<br><br>Define the superloop configuration, where: <ul style="list-style-type: none"> <li>• x = Controller number (1-95) for superloop's shelf 0</li> <li>• y = starting shelf segment number (0-3)</li> <li>• z = ending shelf segment number (0-3)</li> </ul> Enter: X to remove XPE0 or <cr> Return to REQ prompt.                                                                   |
| XPE1   | x y z    | Extended Peripheral Equipment controller 1<br>Peripheral Controller number, starting segment and ending segment<br><br>Define the superloop configuration, where: <ul style="list-style-type: none"> <li>• x = Controller number (1-95) for superloop's shelf 1</li> <li>• y = starting shelf segment number (0-3)</li> <li>• z = ending shelf segment number (0-3)</li> </ul> Enter: <ul style="list-style-type: none"> <li>• X to remove XPE1</li> <li>• &lt;cr&gt; Return to REQ prompt.</li> </ul> |

# LD 97

| Prompt | Response | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XPEC   | (0)-95   | <p>Extended Peripheral Equipment Controller (assign Peripheral Controller numbers; 0 for automatic)</p> <p>Block is built with segments of the peripheral shelf (RCI or FXPEC) which are associated with this SUPL (LCI or FXNET)</p> <p>Where:</p> <p>0 = Automatically assign Controller numbers. The system assigns the next available Controller number.</p> <p>1-95 = Manually assign Controller numbers</p> <p>Precede with X to remove. Remove all cards/TNs in the Controller shelf first. XPEC is prompted if SUPT=CARR or FIBR.</p> |



---

## LD 117—Ethernet and Alarm Management

---

This overlay command format allows the administrator to:

1. configure the Alarm Management feature
2. identify all Meridian 1 alarms
3. configure IP network interface addresses
4. perform all IP network related maintenance and diagnostic functions

Both Administration and Maintenance commands appear in this overlay.

### New Command Format

LD 117 uses a command line input interface (input parser) which has the following general structure (where “=>” is the command prompt):

=> COMMAND OBJECT [(FIELD1 value) (FIELD 2 value)... (FIELDx value)]

LD 117 offers the administrator the following configuration features:

1. **Context Sensitive Help** - Help is offered when “?” is entered. The Help context is determined by the position of the “?” entry in the command line. If you enter “?” in the COMMAND position, Help text will appear which presents all applicable command options. If you enter “?” in the OBJECT position, HELP text will appear which presents all applicable OBJECT options.
2. **Abbreviated Inputs** - The new input parser will recognize abbreviated inputs for commands, objects and object fields. For example, “N” can be entered for the command “NEW” or “R” can be entered for the object “Route”.

3. **Optional Fields** - Object fields with default values can be bypassed by the user on the command line. For example, to configure an object which consists of fields with default values, enter the command, enter the object name, press <return>, and the object will be configured with default values. All object fields do not have to be specified.
4. **Selective Change** - Instead of searching for a prompt within a lengthy prompt-response sequence, “Selective Change” empowers the administrator to directly access the object field to be changed.
5. **Service Change Error Message Consistency** - The parser simplifies usage of service change error messages. LD 117 displays only SCH0099 and SCH0105.

## New Alarm Management Capability

With the Alarm Management feature, all *processor-based system events* are processed and logged into a new disk-based System Event List (SEL). Events which are generated as a result of administration activities, such as SCH or ESN error messages, *are not* logged into the SEL. Events which are generated as a result of maintenance or system activities, like BUG and ERR error messages, *are* logged into the SEL. Unlike the previous System History File, this new System Event List survives Sysload, Initialization and power failures.

### The Event Collector

The Event Collector captures and maintains a list of all processor-based system events. The Event Collector also routes critical events to FIL TTY ports and lights the attendant console minor alarm lamp as appropriate. The System Event List (SEL) can be printed or browsed.

### The Event Server

The *Event Server* consists of two components:

1. **Event Default Table (EDT)**: This table associates events with a default severity. By using the CHG EDT command in LD 117, the EDT can be overridden so that all events default to a severity of either INFO or MINOR. The EDT can be viewed in LD 117.

**Sample Event Default Table (EDT)**

| Error Code | Severity |
|------------|----------|
| ERR220     | Critical |
| IOD6       | Critical |
| BUG4001    | Minor    |

**Note:** Error codes which do not appear in the EDT will be assigned a default severity of MINOR.

2. Event Preference Table (EPT): This table contains site-specific preferences for event severities as well as criteria for severity escalation and alarm suppression. The administrator can configure the EPT to:
  - a override the default event severity assigned by the default table
  - b escalate event severity of frequently occurring minor or major alarms

**Sample Event Preference Table (EPT)**

| Error Code                                                                                                                                                                                                  | Severity | Escalate Threshold (events/60 sec.) (see Note 2) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------|
| ERR??? (see Note 1)                                                                                                                                                                                         | Critical | 5                                                |
| INI???                                                                                                                                                                                                      | Default  | 7                                                |
| BUG1??                                                                                                                                                                                                      | Minor    | 0                                                |
| HWI363                                                                                                                                                                                                      | Major    | 3                                                |
| <b>Note 3:</b> The "?" is a wildcard. See section below for explanation of wildcard entries.                                                                                                                |          |                                                  |
| <b>Note 4:</b> The window timer length defaults to 60 seconds. However, this value can be changed by the Administrator. Read <a href="#">"Global Window Timer Length" on page 820</a> for more information. |          |                                                  |

**Wildcards**

The special wildcard character "?" can be entered for the numeric segment of an error code entry in the EPT to represent a range of events. All events in the range indicated by the wildcard entry can then be assigned a particular severity or escalation threshold.

For example, if “ERR????” is entered and assigned a MAJOR severity in the EPT, all events from ERR0000 to ERR9999 are assigned MAJOR severity. If “BUG3?” is entered and assigned an escalation threshold of 5, the severity of all events from BUG0030 to BUG0039 will be escalated to the next higher severity if their occurrence rate exceeds 5 per time window.

## Escalation and Suppression Thresholds

The escalation threshold specifies a number of events per window timer length that when exceeded, will cause the event severity to be escalated up one level. The window timer length is set to 1 minute by default. Escalation occurs only for minor or major alarms. Escalation threshold values must be less than the universal suppression threshold value.

A suppression threshold suppresses events that flood the system and applies to all events. It is set to 15 events per minute by default.

### Global Window Timer Length

Both the escalation and suppression thresholds are measured within a global window timer length. The window timer length is set to 1 minute by default. However, the window timer length can be changed by using the CHG TIMER command in LD 117.

## TTY Output Format of Events

TTY event output can be formatted or unformatted. Formatted output is also called fancy format. Output format is configurable in LD 117 using the CHG FMT\_OUTPUT command.

### Fancy Format Output

Formatted output appears in the following template:

```
<severity> <report id> <date> <time> <prim_seq_no> <cp_id> <cp_ad>
DESCTXT: <descriptive text>
OPRDATA: <operator data>
EXPDATA: <expert data>
```

| Field              | Description                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <severity>         | ***** (critical); **** (major); *** (minor); " " (blank for info)                                                                                                                                                                                                                                     |
| <report id>        | The report id consists of an event category (e.g. BUG, ERR, etc.) and an event number (1200, 230, etc.). It is padded with blanks at the end to ensure it is 9 characters long (4 characters max. for category and 5 digits max. for number). Examples of report ids are: ERR230, ACD3560, and BUG30. |
| <date>             | DD/MM/YY                                                                                                                                                                                                                                                                                              |
| <time>             | HH:MM:SS                                                                                                                                                                                                                                                                                              |
| <prim_seq_no>      | Primary sequence number of the event (length of 5 digits)                                                                                                                                                                                                                                             |
| <cp_id>            | The Component ID is a 15 character string which indicates the id of the subsystem generating the alarm                                                                                                                                                                                                |
| <cp_ad>            | The Component address is a 15 character string which indicates the address of the subsystem generating the event                                                                                                                                                                                      |
| <descriptive text> | This is an optional string which describes an event                                                                                                                                                                                                                                                   |
| <operator data>    | This is an optional field which holds a 160 character string containing extra text or data to assist the operator in clearing a fault. This field contains any data output with a filtered SL-1 alarm (e.g. loop number, TN, etc.)                                                                    |
| <expert data>      | This is an optional variable length character string which contains extra text or data for a system expert or designer.                                                                                                                                                                               |

The following are samples of fancy format output:

```
*** BUG015 15/12/95 12:05:45 00345
EXPDATA: 04BEF0FC 05500FBA 05500EE2 05500EC6 05500EAA
BUG015 + 05500E72 + 05500E56 + 0550D96 + 055053A + 04D84E02 + 04D83CFC
BUG015 + 04D835CA 04D81BAE 04D7EABE 04F7EABE 04F7EDF2 04F7EFC 04F7E1B0

* ERR00220 15/12/92 12:05:27 00346
OPRDATA: 51
```

```
VAS0010 15/12/92 12:06:11 00347 VMBA VAS 5
```

## Unformatted Output

Unformatted data consists of only the report ID and perhaps additional text.  
The following is a sample of unformatted output:

```
BUG015
BUG015 + 04BEF0FC 05500FBA 05500EE2 05500EAA 0550E8E
BUG015 + 05500E72 05500E56 05500D96 0550053A 04D84E02
BUG015 + 04D835CA 04D81BAE 04D7EABE 04F7EDF2 04F7E2FC 04&E1B0
BUG015 + 04F7E148

ERR00220 51
VAS0010
```

## **Ethernet and Point-to-Point Protocol**

LD 117 may be used to configure and manage an IP network interface. The Meridian 1 is hardware-equipped for this advance with an Ethernet controller on the Small System Controller (SSC) card. Each SSC card is equipped with a Local Area Network Controller for Ethernet which is preconfigured with an unique Ethernet address.

An Ethernet address is a unique 48-bit long physical address assigned to the Ethernet controller on the SSC. On a single CPU M1 system, there is only one SSC which contains one Ethernet interface and an IP address which must be configured. Single CPU systems use only a Primary IP address.

Remote access to Meridian 1 switches is made possible with Point-to-Point Protocol (PPP). LD 117 may be used to configure IP addresses for Point-to-Point Protocol.

The Meridian 1 Ethernet interface is provided by the SSC pack with AUI cable on the back panel. The Point-to-Point Protocol (PPP) can be established via asynchronous connection to any Meridian 1 SDI port. The IP addresses for Ethernet and PPP interface can be configured in overlay 117, and defaults will be used for all new installation and upgrades.

## How to Configure Ethernet and Point-to-Point Protocol

The following tables explain how to configure IP addresses for Ethernet and Point-to-Point Protocol. These two tables are followed by examples.

### Configure IP address for the Ethernet Interface

| Step | Action                                                 |
|------|--------------------------------------------------------|
| 1    | Load Overlay 117                                       |
| 2    | Create host entries                                    |
| 3    | Assign host to primary and/or secondary IP address(es) |
| 4    | Set up Ethernet subnet mask                            |
| 5    | Set up routing entry                                   |

### Configure IP address for the Point-to-Point Protocol Interface

| Step | Action                                                 |
|------|--------------------------------------------------------|
| 1    | Load Overlay 117                                       |
| 2    | Create host entries                                    |
| 3    | Assign host to primary and/or secondary IP address(es) |



**Example 1**  
**Configure IP address for the Ethernet Interface**

**Given:** Primary IP address: 47.1.1.10 ; Secondary IP address: 47.1.1.11; Subnet mask: 255.255.255.0; Default Gateway IP: 47.1.1.1

| Step | Action                                                                                                                                                                                                                                                    |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Load Overlay 117                                                                                                                                                                                                                                          |
| 2    | Create host entries. Enter one of the following commands:<br>NEW HOST PRIMARY_IP 47.1.1.10<br>NEW HOST SECONDARY_IP 47.1.1.10 (for Dual CPU only)<br>NEW HOST GATEWAY_IP 47.1.1.10 (if connected to customer LAN)                                         |
| 3    | Assign host to primary and/or secondary IP address(es). Enter one of the following commands:<br>CHG ELNK ACTIVE PRIMARY_IP<br>CHG ELNK INACTIVE SECONDARY_IP (for Dual CPU only)<br>Verify your IP address for Ethernet by entering the PRT ENLK command. |
| 4    | Set up Ethernet subnet mask. Enter the command:<br>CHG MASK 255.255.255.0<br>Verify subnet mask setting by entering the command: PRT MASK                                                                                                                 |
| 5    | Set up routing entry. Enter the command:<br>NEW ROUTE 0.0.0.0 47.1.1.1 (if connected to customer LAN)<br>*Note that 0.0.0.0 = network IP; 47.1.1.1 = gateway IP<br>Verify default routing by entering the command: PRT ROUTE                              |

**Note 1:** For a single CPU machine, the secondary IP is not used.

**Note 2:** The secondary IP is only accessible when a system is in split mode.

**Note 3:** The subnet mask must be the same value used for the M1 Ethernet network.

**Note 4:** The M1 private Ethernet is used by all M1 devices for system access and control. An internet gateway must be used to isolate the M1 private Ethernet from the customer LAN.

**Note 5:** Routing information is required if an internet gateway or router connects an M1 private network to the customer's LAN.

## Example 2 Configure IP address for the Point-to-Point Protocol Interface

**Given:** Local IP address: 172.1.1.1; Remote IP address 100.1.1.1

| Step | Action                                                                                                                                                                                                                                                                             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Load Overlay 117                                                                                                                                                                                                                                                                   |
| 2    | Create host entries. Enter one of the following commands:<br>NEW HOST LOCAL_PPP 172.1.1.1<br>NEW HOST REMOTE_PPP 100.1.1.1 (this entry is optional)                                                                                                                                |
| 3    | Assign host to primary and/or secondary IP address(es). Enter one of the following commands:<br>CHG PPP LOCAL LOCAL_PPP 0 (always use interface #0)<br>CHG PPP REMOTE REMOTE_PPP 0 (this entry is optional)<br>Verify your IP address(es) for PPP by entering the PRT PPP command. |

## Command and Object Descriptions

### Command Descriptions

| Command | Definition | Description                              |
|---------|------------|------------------------------------------|
| ****    | Abort      | Abort overlay                            |
| BROWSE  | Browse     | Browse an existing System Event List     |
| CHG     | Change     | Change/modify object configuration       |
| DIS     | Disable    | Disable Point-to-Point Protocol          |
| ENL     | Enable     | Enable Point-to-Point Protocol           |
| NEW     | New        | Add and configure new object             |
| OUT     | Out        | Delete existing object                   |
| PRT     | Print      | Print configuration of existing object   |
| RST     | Reset      | Reset Object                             |
| SET     | Set        | Set ELNK subnet mask to configured value |
| STAT    | Status     | Display object statistics                |
| UPDATE  | Update     | Update INET database                     |

## Object Descriptions

| Object        | Description                                                                                                                                                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DBS           | Database                                                                                                                                                                                   |
| EDT           | Event Default Table: Table of default event entries and associated severities                                                                                                              |
| ELNK          | Ethernet interface                                                                                                                                                                         |
| ELNK ACTIVE   | Active Ethernet Link: Change the Primary IP address and host name                                                                                                                          |
| ELNK INACTIVE | Inactive Ethernet Link: Change the Secondary IP address and host name                                                                                                                      |
| EPT           | Event Preference Table: Table of customer's event entries with associated severities                                                                                                       |
| FMT_OUTPUT    | Formatted Output: Determine if system events uses formatted (also called fancy) or unformatted output. See <a href="#">"TTY Output Format of Events" on page 821</a> for more information. |
| HOST          | Host name                                                                                                                                                                                  |
| MASK          | Subnet mask                                                                                                                                                                                |
| OPEN_ALARM    | Open Simple Network Management Protocol (SNMP) traps setting                                                                                                                               |
| PPP           | Point-to-Point Protocol interface                                                                                                                                                          |
| PPP LOCAL     | Local Point-to-Point Protocol interface address                                                                                                                                            |
| PPP REMOTE    | Remote Point-to-Point Protocol interface address                                                                                                                                           |
| PTM           | Point-to-Point Protocol idle Timer                                                                                                                                                         |
| ROUTE         | Configure new routing entry                                                                                                                                                                |
| SELSIZE       | System Event List Size: Number of events in System Event Log                                                                                                                               |
| SEL           | System Event List                                                                                                                                                                          |
| SUPPRESS      | Suppress count: Number of times the same event is processed before it is suppressed                                                                                                        |
| TIMER         | Global window timer length. See <a href="#">"Global Window Timer Length" on page 820</a> for more information.                                                                             |

## Alphabetical list of Administration commands

The commands listed below use the following general structure (where “=>” is the command prompt):

=> COMMAND OBJECT [(FIELD1 value) (FIELD 2 value)... (FIELDx value)]

In the table below, COMMANDS and OBJECTS are in bold typeface and fields are in regular typeface. Fields enclosed in brackets ( ) are default values.

| => Command                        | Description                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BROWSE SEL UP</b> n            | Browse up n # of lines in System Event List (SEL)                                                                                                                                                                                                                                                                                                     |
| <b>BROWSE SEL DOWN</b> n          | Browse down n # of lines in SEL                                                                                                                                                                                                                                                                                                                       |
| <b>BROWSE SEL TOP</b>             | Browse to top of SEL                                                                                                                                                                                                                                                                                                                                  |
| <b>BROWSE SEL BOT</b>             | Browse to bottom of SEL                                                                                                                                                                                                                                                                                                                               |
| <b>BROWSE SEL FIND</b> xxx        | Browse forward to find string xxx in SEL                                                                                                                                                                                                                                                                                                              |
| <b>BROWSE SEL BFIND</b> xxx       | Browse backward to find string xxx in SEL                                                                                                                                                                                                                                                                                                             |
| <b>CHG EDT NORMAL</b>             | Use Event Default Table (EDT) default severities                                                                                                                                                                                                                                                                                                      |
| <b>CHG EDT INFO</b>               | Override EDT; use INFO as default severity for all events except those specified in Event Preference Table (EPT)                                                                                                                                                                                                                                      |
| <b>CHG EDT MINOR</b>              | Override EDT; use MINOR as default severity for all events except those specified in Event Preference Table (EPT)                                                                                                                                                                                                                                     |
| <b>CHG ELNK ACTIVE</b> hostname   | Set Meridian 1 active Ethernet interface IP address                                                                                                                                                                                                                                                                                                   |
| <b>CHG ELNK INACTIVE</b> hostname | Set Meridian 1 inactive Ethernet interface IP address                                                                                                                                                                                                                                                                                                 |
| <b>CHG EPT</b> aa... a INFO x     | Change an Event Preference Table (EPT) entry to Information severity, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul> |

| => Command                        | Description                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CHG EPT</b> aa... a EDT x      | Change EPT to NT-defined severity from EDT, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul> |
| <b>CHG EPT</b> aa... a MAJOR x    | Change an EPT entry to Major severity, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>      |
| <b>CHG EPT</b> aa... a MINOR x    | Change an EPT entry to Minor severity, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>      |
| <b>CHG EPT</b> aa... a CRITICAL x | Change an EPT entry to Critical severity, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>   |
| <b>CHG FMT_OUTPUT</b> OFF         | Turn off formatted output                                                                                                                                                                                                                                                                                                   |
| <b>CHG FMT_OUTPUT</b> ON          | Turn on formatted output                                                                                                                                                                                                                                                                                                    |
| <b>CHG MASK</b> nnn.nnn.nnn.nnn   | Change subnet mask                                                                                                                                                                                                                                                                                                          |
| <b>CHG PPP LOCAL</b> hostname     | Set Meridian 1 local Point-to-point Protocol interface IP address                                                                                                                                                                                                                                                           |
| <b>CHG PPP REMOTE</b> hostname    | Set Meridian 1 remote Point-to-point Protocol interface IP address                                                                                                                                                                                                                                                          |
| <b>CHG PTM</b> 0-60               | Change Point-to-point Protocol idle timer to specified value (in minutes)                                                                                                                                                                                                                                                   |
| <b>CHG SELSIZE</b> 5-(500)-2000   | Change System Event List Size (number of events in SEL)                                                                                                                                                                                                                                                                     |

| => Command                        | Description                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CHG SUPPRESS</b> 5-(15)-127    | Change global suppress for events (number of occurrences before event is suppressed)                                                                                                                                                                                                                                                  |
| <b>CHG TIMER</b> (1)-60           | Change global timer window length in minutes. See <a href="#">“Global Window Timer Length” on page 820</a> for more information.                                                                                                                                                                                                      |
| <b>NEW EPT</b> aa... a INFO x     | Assign Information severity to new EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>         |
| <b>NEW EPT</b> aa... a EDT x      | Assign NT-defined severity from EDT to new EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul> |
| <b>NEW EPT</b> aa... a MAJOR x    | Assign Major severity to new EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>               |
| <b>NEW EPT</b> aa... a MINOR x    | Assign Minor severity to new EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>               |
| <b>NEW EPT</b> aa... a CRITICAL x | Assign Critical severity to new EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> <li>• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your <b>CHG SUPPRESS</b> entry.</li> </ul>            |

| => Command                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NEW HOST</b> hostname IPaddress    | <p>Configure a new host entry. The host name must exist in the host table.</p> <p>The default setting for the Primary IP address is: 137.135.128.253. The default setting for Primary Host Name is: PRIMARY_ENET.</p> <p>The default setting for the Secondary IP address is: 137.135.128.254. The default setting for the Secondary Host Name is: SECONDARY_ENET.</p> <p><b>Host Name Syntax:</b> A host name can be up to 16 characters in length. The first character of a host name must be a letter of the alphabet. A character may be a letter, number, or underscore(_). A period is used as a delimiter between domain names. Spaces and tabs are not permitted. No distinction is made between upper and lower case.</p> |
| <b>NEW ROUTE</b> networkIP gateway IP | Configure a new routing entry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>OUT EPT</b> aa... a                | <p>Delete a single Event Preference Table (EPT) events, where:</p> <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>OUT EPT</b> ALL                    | Delete all entries in Event Default Table (EDT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>OUT HOST</b> nnn                   | Delete configured host entry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>OUT ROUTE</b> nn                   | Delete configured routing entry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>PRT EDT</b> aa... a                | <p>Print a single Event Default Table (EDT) event, where:</p> <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>PRT EDT</b> aa... a bb...b         | <p>Print a range of Event Default Table (EDT) events, where:</p> <ul style="list-style-type: none"> <li>• aa... a = first entry in EDT event range (e.g. BUG1000, ERR0025)</li> <li>• bb...b = last entry in EDT event range (e.g. BUG1000, ERR0025)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>PRT ELNK</b>                       | Print active and inactive Ethernet interface IP addresses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



| => Command                    | Description                                                                                                                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRT EPT aa... a</b>        | Print a single Event Preference Table (EPT) entry, where: <ul style="list-style-type: none"> <li>• aa... a = an event class with an event number (e.g. BUG1000, ERR0025)</li> </ul>                                                                      |
| <b>PRT EPT aa... a bb...b</b> | Print specific Event Preference Table (EPT) entry, where: <ul style="list-style-type: none"> <li>• aa... a = first entry in EPT event range (e.g. BUG1000, ERR0025)</li> <li>• bb...b = last entry in EPT event range (e.g. BUG1000, ERR0025)</li> </ul> |
| <b>PRT EPT ALL</b>            | Print all entries in Event Preference Table (EPT)                                                                                                                                                                                                        |
| <b>PRT FMT_OUTPUT</b>         | Print formatted output string                                                                                                                                                                                                                            |
| <b>PRT HOST</b>               | Print network host table entry(ies) information stored in database                                                                                                                                                                                       |
| <b>PRT MASK</b>               | Print subnet mask stored in database                                                                                                                                                                                                                     |
| <b>PRT OPEN_ALARM</b>         | Print open Simple Network Management Protocol (SNMP) traps setting                                                                                                                                                                                       |
| <b>PRT PPP</b>                | Print Point-to-point Protocol interface address(es)                                                                                                                                                                                                      |
| <b>PRT PTM</b>                | Print current Point-to-point Protocol idle timer settings                                                                                                                                                                                                |
| <b>PRT ROUTE</b>              | Print routing table entry(ies) information stored in database                                                                                                                                                                                            |
| <b>PRT SEL nn</b>             | Print most recent record(s) in system event list, where: nn = 0-(20)-SELsize. For example, if nn = 50, the 50 most recent events in the system event list will be printed.                                                                               |
| <b>PRT SELsize</b>            | Print System Event List size                                                                                                                                                                                                                             |
| <b>PRT SUPPRESS</b>           | Print global suppress value                                                                                                                                                                                                                              |
| <b>PRT TIMER</b>              | Print global timer window length (in minutes). See <a href="#">“Global Window Timer Length” on page 820</a> for more information.                                                                                                                        |
| <b>OUT EPT ALL</b>            | Delete all entries in Event Preference Table (EPT)                                                                                                                                                                                                       |
| <b>OUT EPT aa...a</b>         | Delete a single EPT entry, where: <ul style="list-style-type: none"> <li>• aa... a = first entry in EPT event range (e.g. BUG1000, ERR0025)</li> </ul>                                                                                                   |
| <b>RST ELNK ACTIVE</b>        | Reset Meridian 1 active Ethernet interface IP address to default value                                                                                                                                                                                   |

# LD 117

| => Command               | Description                                                                |
|--------------------------|----------------------------------------------------------------------------|
| <b>RST ELNK INACTIVE</b> | Reset Meridian 1 inactive Ethernet interface IP address to default value   |
| <b>RST MASK</b>          | Reset subnet mask to default                                               |
| <b>RST PPP LOCAL</b>     | Reset local Point-to-point Protocol interface IP address to default value  |
| <b>RST PPP REMOTE</b>    | Reset remote Point-to-point Protocol interface IP address to default value |
| <b>RST PTM</b>           | Reset Point-to-point Protocol idle timer to default                        |
| <b>UPDATE DBS</b>        | Rebuild INET database and renumber host and route entry ID                 |

---

## Alphabetical list of Maintenance Commands

Maintenance commands share the same entry format as Administration commands.

| => Command                         | Description                                                                                                                                                                       |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DIS HOST n</b>                  | Remove a host from the run time host table, where:<br>n = host entry number                                                                                                       |
| <b>DIS PPP</b>                     | Disable Point-to-point Protocol access (this enables PPPD)                                                                                                                        |
| <b>DIS ROUTE n</b>                 | Remove a route from the run time routing table, where:<br>n = route entry number                                                                                                  |
| <b>ENL HOST n</b>                  | Add a host to run time host table, where: n = host entry number                                                                                                                   |
| <b>ENL PPP</b>                     | Enable Point-to-point Protocol access (Enables PPPD command)                                                                                                                      |
| <b>ENL ROUTE n</b>                 | Add a route to run time routing table, where: n = route entry number                                                                                                              |
| <b>SET MASK</b>                    | Set ELNK subnet mask to configured value                                                                                                                                          |
| <b>SET OPEN_ALARM slot address</b> | Add an SNMP (Simple Network Management Protocol) trap destination slot address from 0 to 7.<br>The address format is: x.x.x.x. (TCP/IP)<br>To clear slot, set address to 0.0.0.0. |
| <b>STAT HOST</b>                   | Display current runtime host table status                                                                                                                                         |
| <b>STAT PPP</b>                    | Show Point-to-point Protocol connection status                                                                                                                                    |
| <b>STAT ROUTE</b>                  | Display host and network routing table                                                                                                                                            |



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## LD 135—Core Common Equipment Diagnostic

---

LD 135 provides diagnostic and maintenance information. It provides a means of performing the following functions:

- clearing minor and major alarms
- clearing and printing maintenance display contents for the primary Core
- testing the idle Core
- displaying CP card status and ID

When a status appears disabled, one or more Out-of-Service (OOS) messages may appear. Listed below are the possible OOS messages. (What actually appears are the numbers associated with the OOS text).

### Possible OOS Messages

- 0 = CP local bus parity threshold exceeded
- 1 = CP card HPM timeout threshold exceeded
- 9 = Port has been disabled by craftsman.
- 10 = Device is not accessible.
- 20 = CNI card has been manually disabled.
- 21 = Card test failed.
- 22 = Port test failed.
- 24 = Port interrupt line 0 disabled.
- 25 = Port interrupt line 1 disabled.
- 26 = Port interrupt line 2 disabled.
- 27 = Port interrupt line 3 disabled.

## Basic Commands

|          |                                                                                                   |
|----------|---------------------------------------------------------------------------------------------------|
| CMAJ     | Clear major alarm, and reset power fail transfer.                                                 |
| CMIN     | Clear the minor lamp on a system basis                                                            |
| CMIN ALL | Clear minor alarm indication on all attendant consoles                                            |
| CMIN c   | Clear minor alarm indication on attendant consoles for customer c (not applicable for Release 22) |
| MIDN     | Run midnight routines after LD 135 is aborted and TTY is logged out.                              |
| STAT CPU | Get the status and core numbers for both CPs.                                                     |
| STAT MEM | Print amount of configured memory.                                                                |

---

---

## Alphabetical list of commands

| Command  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CMAJ     | Clear major alarm, and reset power fail transfer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CMIN     | Clear the minor lamp on a system basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CMIN ALL | Clear minor alarm indication on all attendant consoles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CMIN c   | Clear minor alarm indication on attendant consoles for customer c. (not applicable for Release 22)                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MIDN     | Run midnight routines after LD 135 is aborted and TTY is logged out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| STAT CPU | <p>Get the status and core numbers for both CPs. Possible responses are:</p> <p>ENBL = CP is running<br/>IDLE = CP is in standby<br/>DSBL = CP is disabled</p> <p>If the status is DSBL, one of the following OOS reasons is printed:</p> <p>0 = CP card local bus parity threshold exceeded<br/>1 = CP card sanity timeout threshold exceeded<br/>10 = Secondary CP is not accessible<br/>16 = Secondary CP has a major fault</p> <p>This command also prints out the results of the latest self-test, and the position of the MAINT/NORM switch.</p> |
| STAT MEM | Print amount of configured memory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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## LD 137—Core Input/Output Diagnostic

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LD 137 provides SSC related diagnostic and maintenance information. Some commands in LD 37 can also be used. Refer to that program.

LD 137 provides a means of performing the following function.

— displaying the Security Device Identification of the Security Dongle

When a status appears disabled, one or more Out of Service (OOS) messages may appear. Listed below are the possible OOS messages:

- Unexpected interrupt fault monitor threshold exceeded
- Fault interrupt fault monitor threshold exceeded
- Processor exception fault monitor threshold exceeded
- ASIC interrupt fault monitor threshold exceeded
- Unrecognized error fault monitor threshold exceeded
- General event interrupt fault monitor threshold exceeded

## Basic Commands

|               |                                                                                        |
|---------------|----------------------------------------------------------------------------------------|
| DIS ELNK      | Disable the ethernet link on the SSC pack                                              |
| ENL ELNK      | Enable the ethernet link on the SSC pack                                               |
| ENL HOST n    | Add a host to run time host table                                                      |
| SDID          | Display Security Device Identification of Security Dongle(s)                           |
| STAT          | Get status of Ethernet.                                                                |
| STAT ELNK     | Display status of the ethernet link on the active SSC pack whether enabled or disabled |
| STAT HOST     | Display current run time host table status                                             |
| TEST ELNK INT | Test internal loop-back on Ethernet link                                               |
| TEST ELNK EXT | Test external loop-back on Ethernet link                                               |
| TEST ELNK TDR | Test the Time Domain Reflectometry                                                     |
| TTY x         | Test TTY x                                                                             |

---

## Alphabetical list of commands

| Command    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Pack/Rel |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| DIS ELNK   | <p>Disable the ethernet link on the active SSC pack.</p> <p>An attempt is made to disable the Ethernet link. When the link is disabled, all activities will be terminated. The system displays <b>OK</b> to indicate that the link is disabled or <b>FAIL</b> to indicate that the link could not be disabled.</p>                                                                                                                                                                                                                                                                                                                          | basic-22 |
| ENL ELNK   | <p>Enable the ethernet link on the active SSC pack.</p> <p>If the Ethernet link is down, entering this command will cause an attempt to restore the Ethernet link to normal operation state. However, if the system cannot successfully restore the link, the Ethernet link will remain disabled.</p> <p>If the link was already up, this command does not affect the current operation of it. The system displays <b>OK</b> to indicate that the link is now enabled or <b>FAIL</b> to indicate that the link could not be enabled.</p>                                                                                                    | basic-22 |
| ENL HOST n | Add a host to run time host table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | basic-22 |
| SDID       | Display Security Device Identification of Security Dongle(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | basic-23 |
| STAT       | <p>Get status of Ethernet.</p> <p>If Ethernet is disabled, the status (enabled or disabled) is displayed along with an OOS message.</p> <p>One of the following OOS messages may appear:</p> <ul style="list-style-type: none"> <li>• Unexpected interrupt fault monitor threshold exceeded</li> <li>• Fault interrupt fault monitor threshold exceeded</li> <li>• Processor exception fault monitor threshold exceeded</li> <li>• ASIC interrupt fault monitor threshold exceeded</li> <li>• Unrecognized error fault monitor threshold exceeded</li> <li>• General event interrupt fault monitor threshold exceeded</li> <li>•</li> </ul> | basic-18 |

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|               | <ul style="list-style-type: none"> <li>• CMDU out-of-service</li> <li>• Hard disk read error</li> <li>• Hard disk write error</li> <li>• Hard disk drive error</li> <li>• CMDU does not respond, the disk drive may be missing</li> <li>• CMDU has been disabled by the craftsman</li> <li>• CMDU is disabled because the IOP is out-of-service</li> </ul>                                                                                                                                                           |          |
| STAT ELNK     | <p>Display status of the ethernet link on the active SSC pack whether enabled or disabled. The Ethernet address of this SSC is also displayed.</p> <p>If the ethernet link is disabled, an OOS reason will be displayed containing the following information:</p> <pre> ELNK           ENABLED Ethernet (In unit number 0): Host: aaaxxx Internet address:  xx.xxx.xx.xxx Netmask:  xxxxxxxxxx ; Subnetmask: xxxxxxxxxx xxx packets received ; xxx packets sent x input errors ; x output errors x collisions </pre> | basic-22 |
| STAT HOST     | Display current run time host table status.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | basic-22 |
| TEST ELNK EXT | <p>Test the external-loop back on Ethernet link.</p> <p>The result displayed can be either: PASS or FAIL. A pass indicates that the system can transmit its own transmitted packet and a fail means the opposite.</p>                                                                                                                                                                                                                                                                                                | basic-22 |
| TEST ELNK INT | <p>Test the internal-loop back on Ethernet link.</p> <p>The result displayed can be either: PASS or FAIL. A pass indicates that the system can receive its own transmitted packet and a fail means the opposite.</p>                                                                                                                                                                                                                                                                                                 | basic-22 |
| TEST ELNK TDR |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | basic-22 |

**Test the Time Domain Reflectory**

The displayed result is used to determine the location of suspected cable faults. A confirm message is displayed to ask the user to enter YES or NO. The entry YES tells the system to stop the Ethernet communication and perform a DTR. The entry NO tells the system to ignore the command.

The Ethernet link remains disabled after this test. The user must enable it by command ENL ELNK.

TTY x

**Test TTY x. Response is:**

basic-18

ABCDEFGHIJKLMNOPQRSTUVWXYZ

0123456789"#\$%\*!&amp;()&lt;&gt;-.:,.? READY FOR INPUT

Anything entered on the keyboard will be echoed until END is input.

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## LD 143—Customer Configuration Backup and Restore

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### Basic commands

|         |                           |
|---------|---------------------------|
| UPGRADE | Perform upgrade           |
| XBK     | Remote backup database    |
| XRT     | Remote restore database   |
| XSL     | Remote sysload the system |
| XVR     | Remote verify database    |

---

## Alphabetical list of commands

| Command | Description                                                                                                          |
|---------|----------------------------------------------------------------------------------------------------------------------|
| XBK     | Remote backup database<br>Backup the configuration files from the primary flash drive of the system onto a computer. |
| XRT     | Remote restore database<br>Restore the files from a computer into the primary flash drive of the system.             |
| XSL     | Remote sysload the system<br>Sysload the system from the primary flash drive.                                        |
| XVR     | Remote verify database<br>Verify the files on a computer with the files in the primary flash drive of the system.    |



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Meridian 1

# Option 11C Compact

## Input/Output Guide

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# Revision history

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**November 1997**

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Meridian 1

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